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JOB ORDER NO. 3-1213004		INDEX P		PLANT NO. T413		DRAWING NUMBER ED-306151		SHEET NO. 01 of 24		REV. NO. 00		NOTES			
<div>ADDITIONAL POWER SUPPLY TO IBN-SINA SEC ROOM IBN SINA 230KV S/S CONTRACT NO: 11-ER203</div> <div>IFC SUBMITTAL FOR DIGITAL FAULT RECORDER SYSTEM</div>															
AMETEK S.O.# : 11002273-3															
AMETEK DRAWING# : D-1105-212															
SAITE P.O. # : API-D-0826-06656															
REFERENCE DRAWINGS															
DRAWING TITLE												DRAWING NO.			
DRAWING CONTROL SHEET NUMBER												ED-306014			
ISSUED FOR CONSTRUCTION															
AS-BUILT BY _____ DATE _____															
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REV. NO. DATE BY DESCRIPTION CHKD. CERT. APP'D.															
الشركة السعودية للكهرباء Saudi Electricity Company															
DRAWN BY: MA CHECKED BY: _____ SCALE: NONE															
DATE STARTED: 28-11-12 DATE COMPLETED: _____															
DPR'G. DEPT.: _____ ENG. DEPT.: _____															
THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION OR FOR ORDERING MATERIAL UNTIL CERTIFIED AND DATED												CERTIFIED BY: _____ DATE: _____			
TR-2200 FAULT RECORDER															
COVER PAGE															
SEC-ROOM : IBN SINA S/S															
JUBAIL SAUDI ARABIA															
JOB ORDER NO. 3-1213004		INDEX P		PLANT NO. T413		DRAWING NUMBER ED-306151		SHEET NO. 01 of 24		REV. NO. 00		1105-212_1.DWG			
SEC-ERB CAD-A (2002/04) DMS VECTOR Code03															

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ED-306151

T413

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3-1213004

3-1213004

REV. NO.

SHEET NO.

DRAWING NUMBER

PLANT NO.

INDEX

JOB ORDER NO.

SCHEMATIC SYMBOL

SCHEMATIC SYMBOL

LAYOUT DRAWINGS

LAYOUT DRAWINGS

120VAC OUTLET

220VAC OUTLET

ARRIVA-PRIMA RELAY AND BASE

SCHNEIDER ELECTRIC DOUBLE CIRCUIT BREAKER

MTK TERMINAL BLOCK

UMK-RJ11 PHONE SWITCH

AMETEK CICT TRANSFORMER

DOOR SWITCH

FT1 TEST SWITCH

URTKS-BEN TERMINALS SLIDING LINKS

FERRAZ-SHAWMUT FUSE BLOCK

PHOENIX SOLID STATE RELAY

HEATER

SYSTEM SAFETY GROUND

WIRE END LOCATOR

THERMOSTAT

FLOURESCENT LIGHT FIXTURE

FAN WITH SPEED CONTROL

TS1

120VAC OUTLET

220VAC OUTLET

ARRIVA-PRIMA RELAY AND BASE

SCHNEIDER ELECTRIC DOUBLE CIRCUIT BREAKER

MTK TERMINAL BLOCK

UMK-RJ11 PHONE SWITCH

AMETEK CICT TRANSFORMER

DOOR SWITCH

FT1 TEST SWITCH

URTKS-BEN TERMINALS SLIDING LINKS

FERRAZ-SHAWMUT FUSE BLOCK

PHOENIX SOLID STATE RELAY

HEATER

SYSTEM SAFETY GROUND

WIRE END LOCATOR

THERMOSTAT

FLOURESCENT LIGHT FIXTURE

FAN WITH SPEED CONTROL

TS1

NOTES

INSTALLATION NOTES:

1. CUSTOMER WIRING SHOWN DASHED. AMETEK FACTORY WIRING SHOWN SOLID.

2. EACH CABINET IS EQUIPPED WITH 90° DOOR STOPS AND PADLOCK TYPE DOOR HANDLES.

3. THE CABINET IS RATED IP41, WITH FRONT / REAR ACCESS & TOP / BOTTOM CABLE ENTRY.

EXTERIOR FINISH: RAL7038

INTERIOR FINISH : RAL9003

SERVICE NOTES:

1. THE TR-2000 SYSTEM IS WIRED FOR 32 ANALOG AND 128 DIGITAL CHANNELS.

2. THE TR-2000 HAS BEEN CONFIGURED AND CALIBRATED AT THE FACTORY AS FOLLOWS:

CHANNELS CURRENT: REF. WIRING

CHANNELS VOLTAGE: REF. WIRING

3. BOTH VOLTAGE INPUT AND CICT OUTPUTS ARE TO BE WIRED TO FT-19R VOLTAGE TEST SWITCHES. THE FULL-SCALE SIGNAL APPLIED TO THE TR-2000 INPUT FOR VOLTAGE CHANNELS IS 300V PEAK AND 2V PEAK FOR CURRENT CHANNELS.

4. CICT'S (CURRENT ISOLATOR CT) ARE PROVIDED LOOSE PIECE FOR CURRENT INPUTS. CICT OUTPUT IS 70.7mVAC (RMS) AT THE RATED NOMINAL INPUT (1A/5A AMPS). FULL-SCALE CURRENT IS 20 TIMES THE NOMINAL VALUE (20/100 AMPS).

5. TO CHANGE A CHANNEL FROM CURRENT TO VOLTAGE OR FROM VOLTAGE TO CURRENT, CHANGE THE JUMPER ON THE INPUT MODULE AND RE-CALIBRATE THE INPUT (REF. TO THE TR-2000 INSTRUCTION MANUAL.)

6. DIGITAL INPUT FIELD CONTACT VOLTAGE IS 125VDC.

7. SYSTEM POWER IS 125VDC. THE COURTESY OUTLET, LIGHT AND PRINTER REQUIRE 220VAC. THERE IS ALSO 120VAC OUTLET AVAILABLE.

8. TR-2000 VISUAL STATUS INDICATORS ARE ON THE FRONT OF THE TR-2000. STATUS OUTPUTS ARE WIRED TO X101.

9. ALL LABELING TAGS SHOWN ARE ENGRAVED LAMACOID, BLACK LETTERING ON WHITE BACKGROUND. REFERENCE PAGE 9 FOR TAG DETAILS.

10. ALL DIMENSIONS ARE IN INCHES [MM].

11. CIRCLED NUMBERS WITH ARROWS INDICATE THE BILL OF MATERIAL REFERENCED ON PG 10.

33

AMETEK S.O.# : 11002273-3

AMETEK DRAWING# : D-1105-212

SAITE P.O. # : API-D-0826-06656

REFERENCE DRAWINGS

DRAWING TITLE

DRAWING NO.

DRAWING CONTROL SHEET NUMBER

ED-306014

ISSUED FOR CONSTRUCTION

AS-BUILT BY DATE

0027/01/15SKT

ISSUED FOR CONSTRUCTION

MA

REV. NO. DATE BY DESCRIPTION CHKD. CERT. APPD.

الشركة السعودية للكهرباء

Saudi Electricity Company

DRAWN BY: MA CHECKED BY SCALE: NONE

DATE STARTED: 28-11-12 DATE COMPLETED

DPR'G. DEPT. ENG. DEPT.

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION OR FOR ORDERING MATERIAL UNTIL CERTIFIED AND DATED

CERTIFIED BY DATE

TR-2200 FAULT RECORDER

DRAWING SYMBOLS SHEET

SEC-ROOM : IBN SINA S/S

JUBAIL SAUDI ARABIA

JOB ORDER NO.

INDEX

PLANT NO.

DRAWING NUMBER

SHEET NO.

REV. NO.

3-1213004

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T413

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03 of 24

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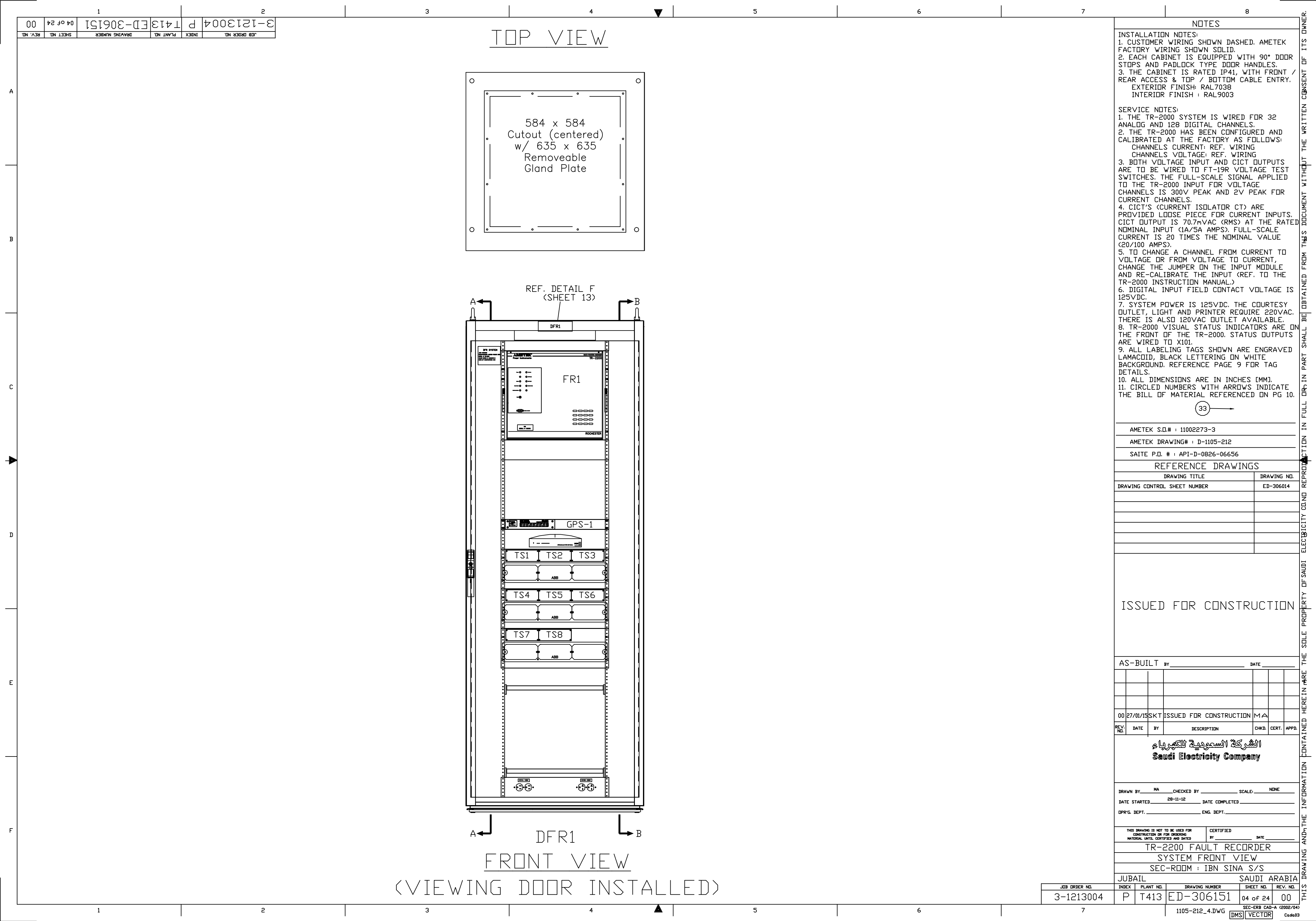
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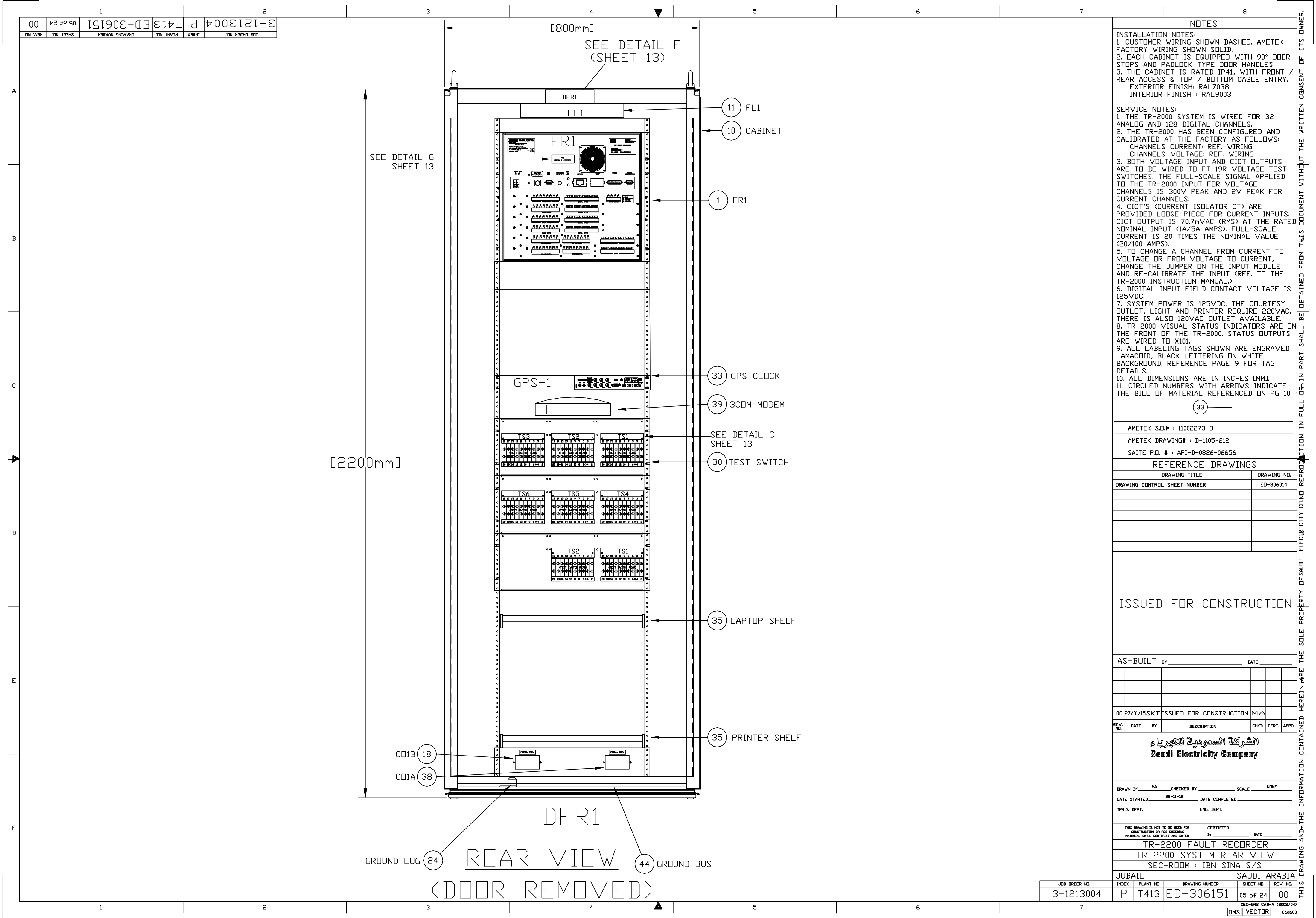
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DMS VECTOR

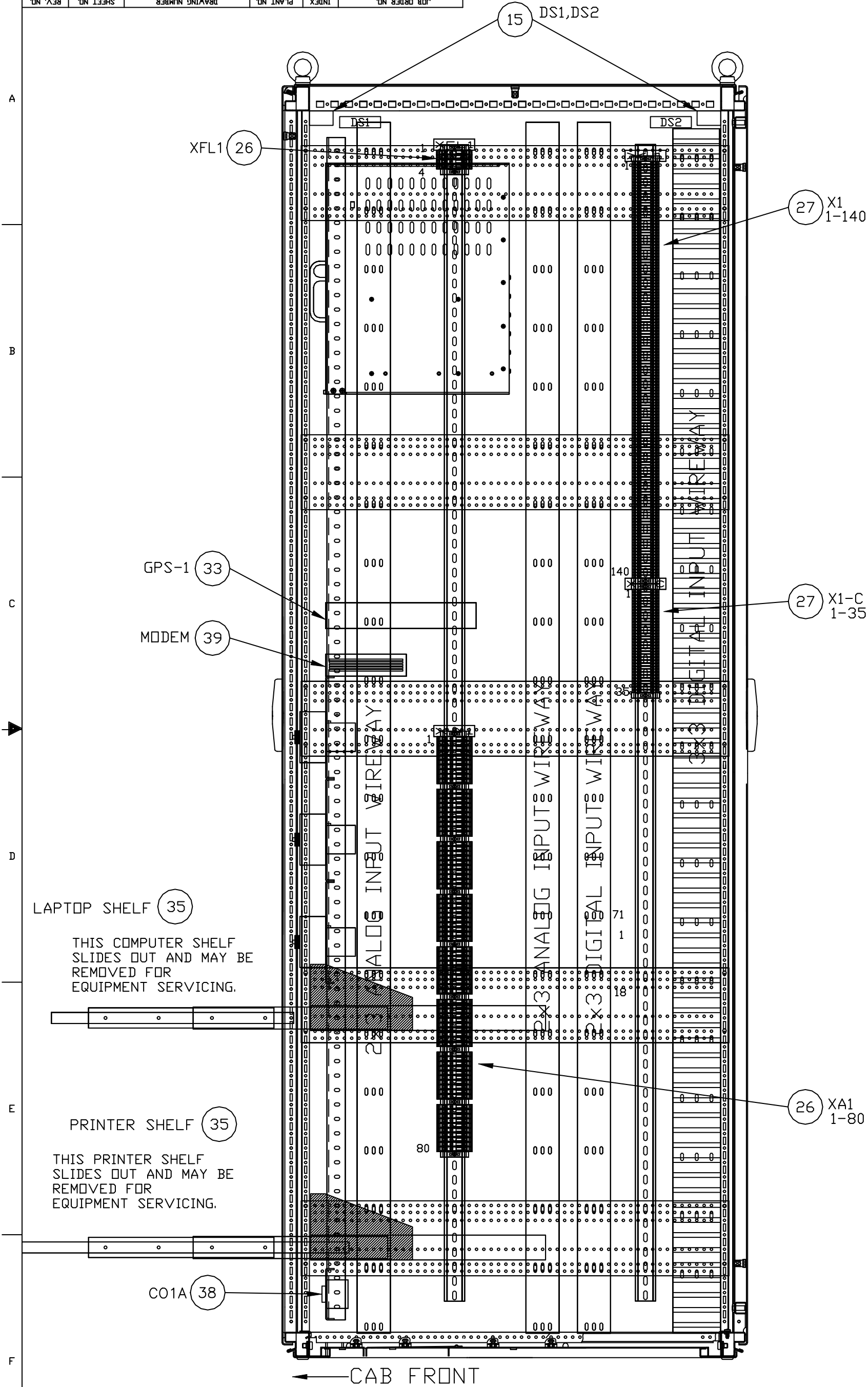
Code03

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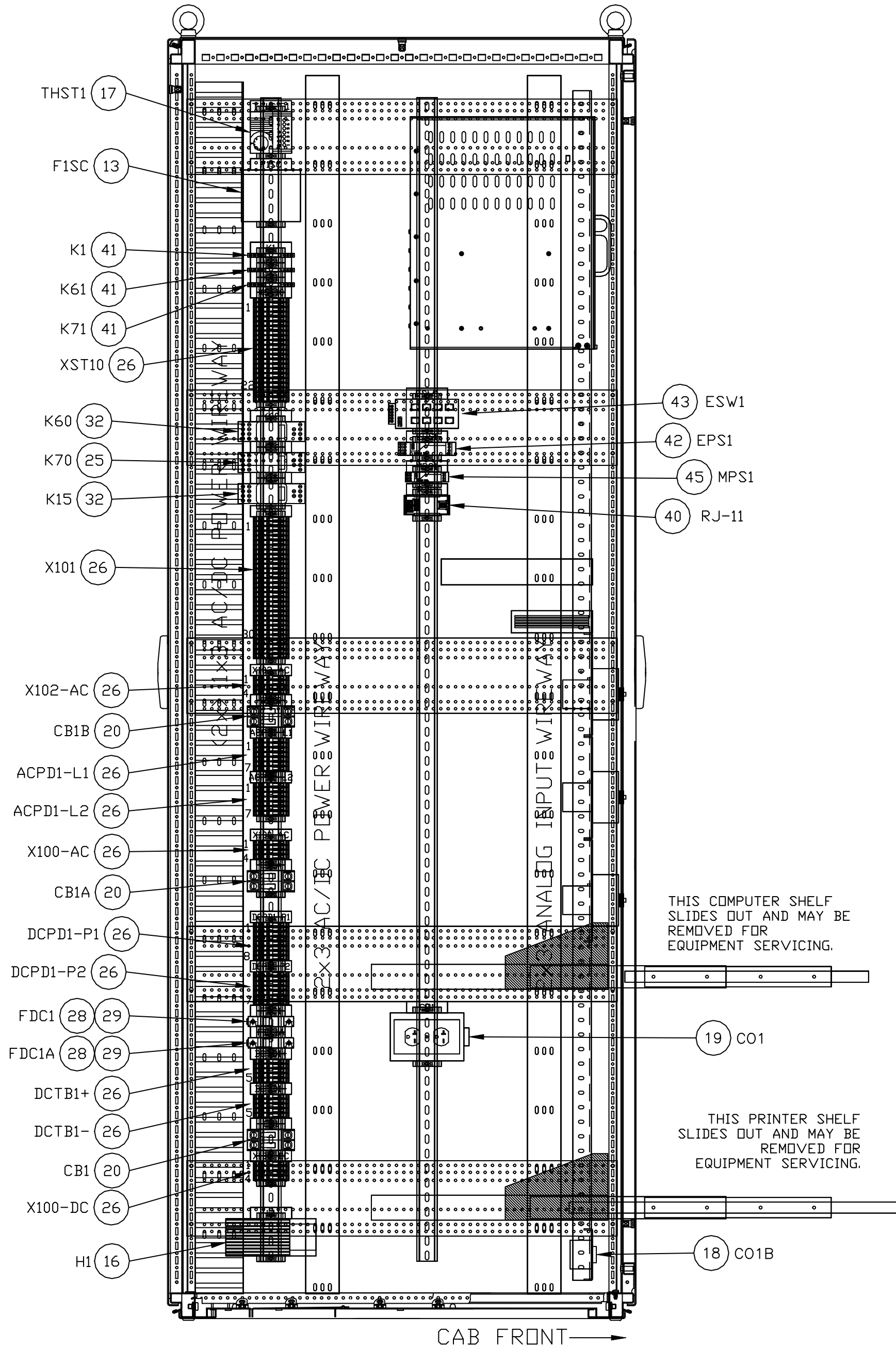




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JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.		



DFR1 SIDE A-A



DFR1 SIDE B-B

NOTES

INSTALLATION NOTES:

1. CUSTOMER WIRING SHOWN DASHED. AMETEK FACTORY WIRING SHOWN SOLID.
2. EACH CABINET IS EQUIPPED WITH 90° DOOR STOPS AND PADLOCK TYPE DOOR HANDLES.
3. THE CABINET IS RATED IP41, WITH FRONT / REAR ACCESS & TOP / BOTTOM CABLE ENTRY. EXTERIOR FINISH: RAL7038 INTERIOR FINISH: RAL9003

SERVICE NOTES:

1. THE TR-2000 SYSTEM IS WIRED FOR 32 ANALOG AND 128 DIGITAL CHANNELS.
2. THE TR-2000 HAS BEEN CONFIGURED AND CALIBRATED AT THE FACTORY AS FOLLOWS:
CHANNELS CURRENT: REF. WIRING
CHANNELS VOLTAGE: REF. WIRING
3. BOTH VOLTAGE INPUT AND CICT OUTPUTS ARE TO BE WIRED TO FT-19R VOLTAGE TEST SWITCHES. THE FULL-SCALE SIGNAL APPLIED TO THE TR-2000 INPUT FOR VOLTAGE CHANNELS IS 300V PEAK AND 2V PEAK FOR CURRENT CHANNELS.
4. CICT'S (CURRENT ISOLATOR CT) ARE PROVIDED LOOSE PIECE FOR CURRENT INPUTS. CICT OUTPUT IS 70.7mVAC (RMS) AT THE RATED NOMINAL INPUT (1A/5A AMPS). FULL-SCALE CURRENT IS 20 TIMES THE NOMINAL VALUE (20/100 AMPS).
5. TO CHANGE A CHANNEL FROM CURRENT TO VOLTAGE OR FROM VOLTAGE TO CURRENT, CHANGE THE JUMPER ON THE INPUT MODULE AND RE-CALIBRATE THE INPUT (REF. TO THE TR-2000 INSTRUCTION MANUAL.)
6. DIGITAL INPUT FIELD CONTACT VOLTAGE IS 125VDC.
7. SYSTEM POWER IS 125VDC. THE COURTESY OUTLET, LIGHT AND PRINTER REQUIRE 220VAC. THERE IS ALSO 120VAC OUTLET AVAILABLE.
8. TR-2000 VISUAL STATUS INDICATORS ARE ON THE FRONT OF THE TR-2000. STATUS OUTPUTS ARE WIRED TO X101.
9. ALL LABELING TAGS SHOWN ARE ENGRAVED LAMACOID, BLACK LETTERING ON WHITE BACKGROUND. REFERENCE PAGE 9 FOR TAG DETAILS.
10. ALL DIMENSIONS ARE IN INCHES [MM].
11. CIRCLED NUMBERS WITH ARROWS INDICATE THE BILL OF MATERIAL REFERENCED ON PG 10.

AMETEK S.O.# : 11002273-3

AMETEK DRAWING# : D-1105-212

SAITE P.O. # : API-D-0826-06656

REFERENCE DRAWINGS

DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET NUMBER	ED-306014

ISSUED FOR CONSTRUCTION

AS-BUILT BY _____ DATE _____

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REV. NO. DATE BY DESCRIPTION CHKD. CERT. APPD.

الشركة السعودية للكهرباء
Saudi Electricity Company

DRAWN BY: MA CHECKED BY: _____ SCALE: NONE
DATE STARTED: 28-11-12 DATE COMPLETED: _____
DPR/G. DEPT.: _____ ENG. DEPT.: _____

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION OR FOR ORDERING MATERIAL UNTIL CERTIFIED AND DATED

CERTIFIED BY: _____ DATE: _____

TR-2200 FAULT RECORDER

DFR1 SIDE VIEW A-A, B-B

SEC-ROOM : IBN SINA S/S

JUBAIL SAUDI ARABIA

JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
3-1213004	P	T413	ED-306151	06 of 24	00

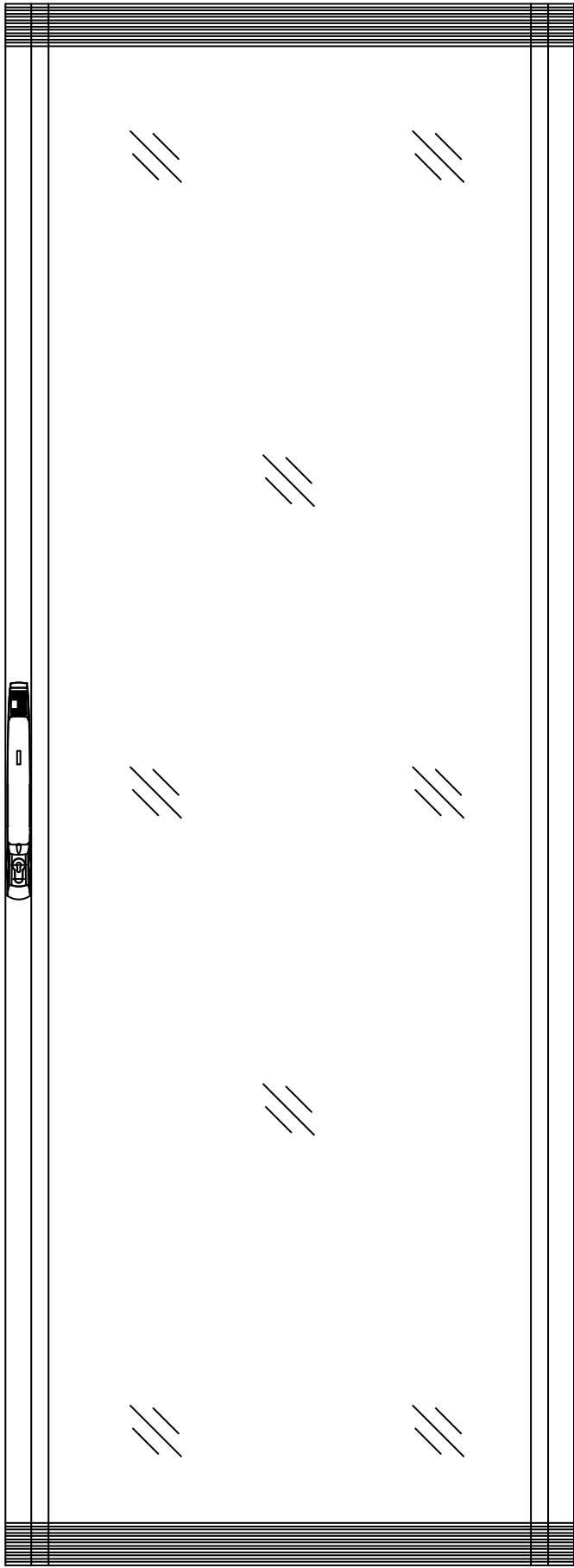
SEC-ERB CAD-A (2002/04)

DMS VECTOR Code03

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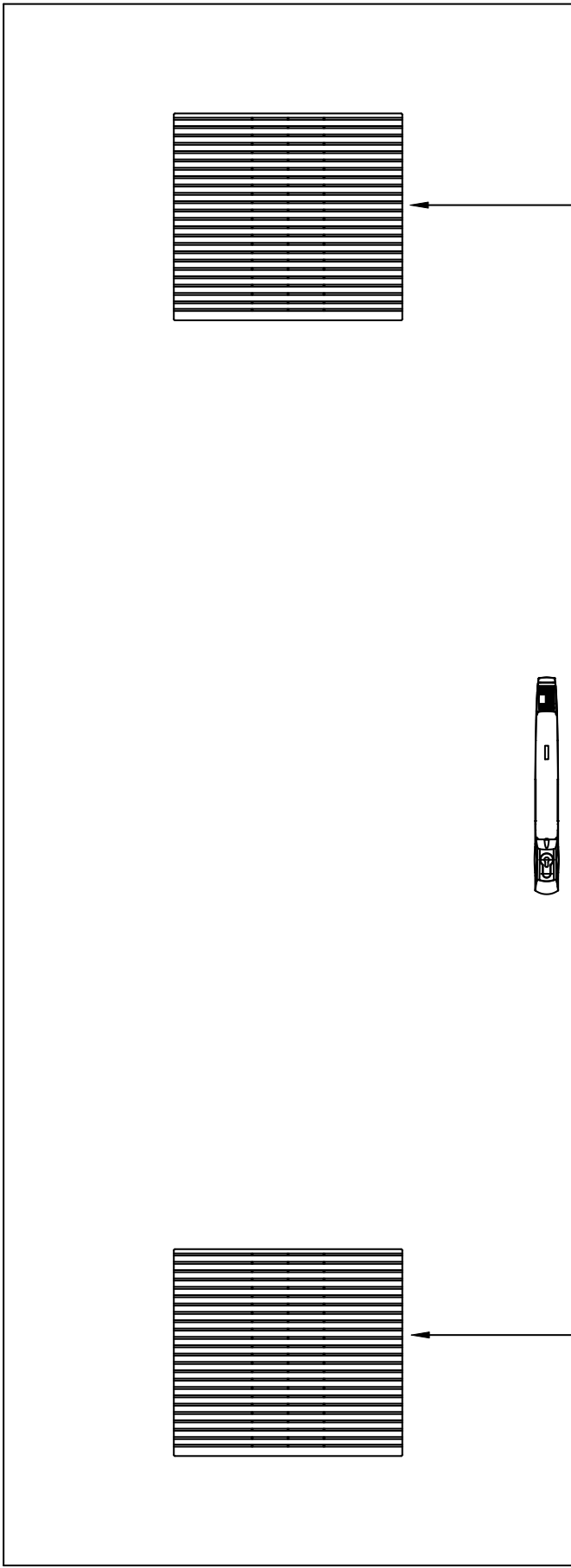
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3-1213004		P		T413		ED-306151		08 of 24		00					
JOB ORDER NO.		INDEX		PLANT NO.		DRAWING NUMBER		SHEET NO.		REV. NO.					

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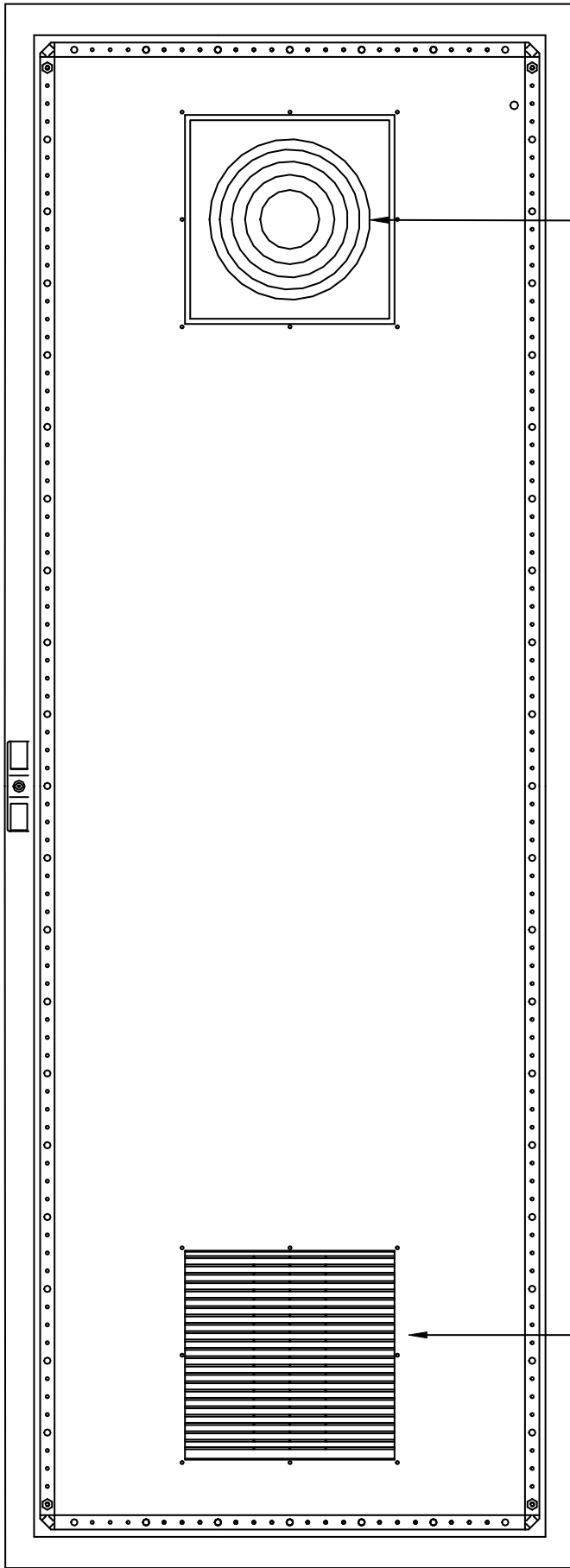


FRONT VIEWING DOOR

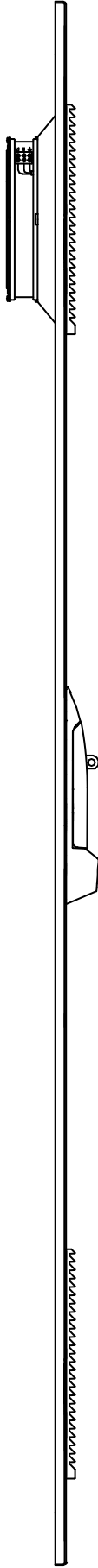
- SINGLE-PANE SAFETY GLASS
- EXTRUDED ALUMINUM FRAME
- POWDER COAT FINISH



REAR DOOR
(FRONT VIEW)



REAR DOOR
(REAR VIEW)



REAR DOOR
(SIDE VIEW)

NOTES

INSTALLATION NOTES:

1. CUSTOMER WIRING SHOWN DASHED. AMETEK FACTORY WIRING SHOWN SOLID.
2. EACH CABINET IS EQUIPPED WITH 90° DOOR STOPS AND PADLOCK TYPE DOOR HANDLES.
3. THE CABINET IS RATED IP41, WITH FRONT / REAR ACCESS & TOP / BOTTOM CABLE ENTRY.

EXTERIOR FINISH: RAL7038
INTERIOR FINISH : RAL9003

SERVICE NOTES:

1. THE TR-2000 SYSTEM IS WIRED FOR 32 ANALOG AND 128 DIGITAL CHANNELS.
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CHANNELS VOLTAGE: REF. WIRING
CHANNELS CURRENT: REF. WIRING
3. BOTH VOLTAGE INPUT AND CICT OUTPUTS ARE TO BE WIRED TO FT-19R VOLTAGE TEST SWITCHES. THE FULL-SCALE SIGNAL APPLIED TO THE TR-2000 INPUT FOR VOLTAGE CHANNELS IS 300V PEAK AND 2V PEAK FOR CURRENT CHANNELS.
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9. ALL LABELING TAGS SHOWN ARE ENGRAVED LAMACOID, BLACK LETTERING ON WHITE BACKGROUND. REFERENCE PAGE 9 FOR TAG DETAILS.
10. ALL DIMENSIONS ARE IN INCHES [MM].
11. CIRCLED NUMBERS WITH ARROWS INDICATE THE BILL OF MATERIAL REFERENCED ON PG 10.

AMETEK S.O.# : 11002273-3
AMETEK DRAWING# : D-1105-212
SAITE P.O. # : API-D-0826-06656

REFERENCE DRAWINGS	
DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET NUMBER	ED-306014

ISSUED FOR CONSTRUCTION

AS-BUILT		BY	DATE
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REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.

الشركة السعودية للكهرباء
Saudi Electricity Company

DRAWN BY: MA CHECKED BY: SCALE: NONE
DATE STARTED: 28-11-12 DATE COMPLETED:
DPR'G. DEPT.: ENG. DEPT.:

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CERTIFIED BY: DATE:

TR-2200 FAULT RECORDER
SYSTEM FRONT / REAR DOOR DETAIL
SEC-ROOM : IBN SINA S/S

JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
3-1213004	P	T413	ED-306151	08 of 24	00

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REV. NO.

24 of 09

SHEET NO.

ED-306151

DRAWING NUMBER

T413

PLANT NO.

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INDEX

3-1213004

JOB ORDER NO.

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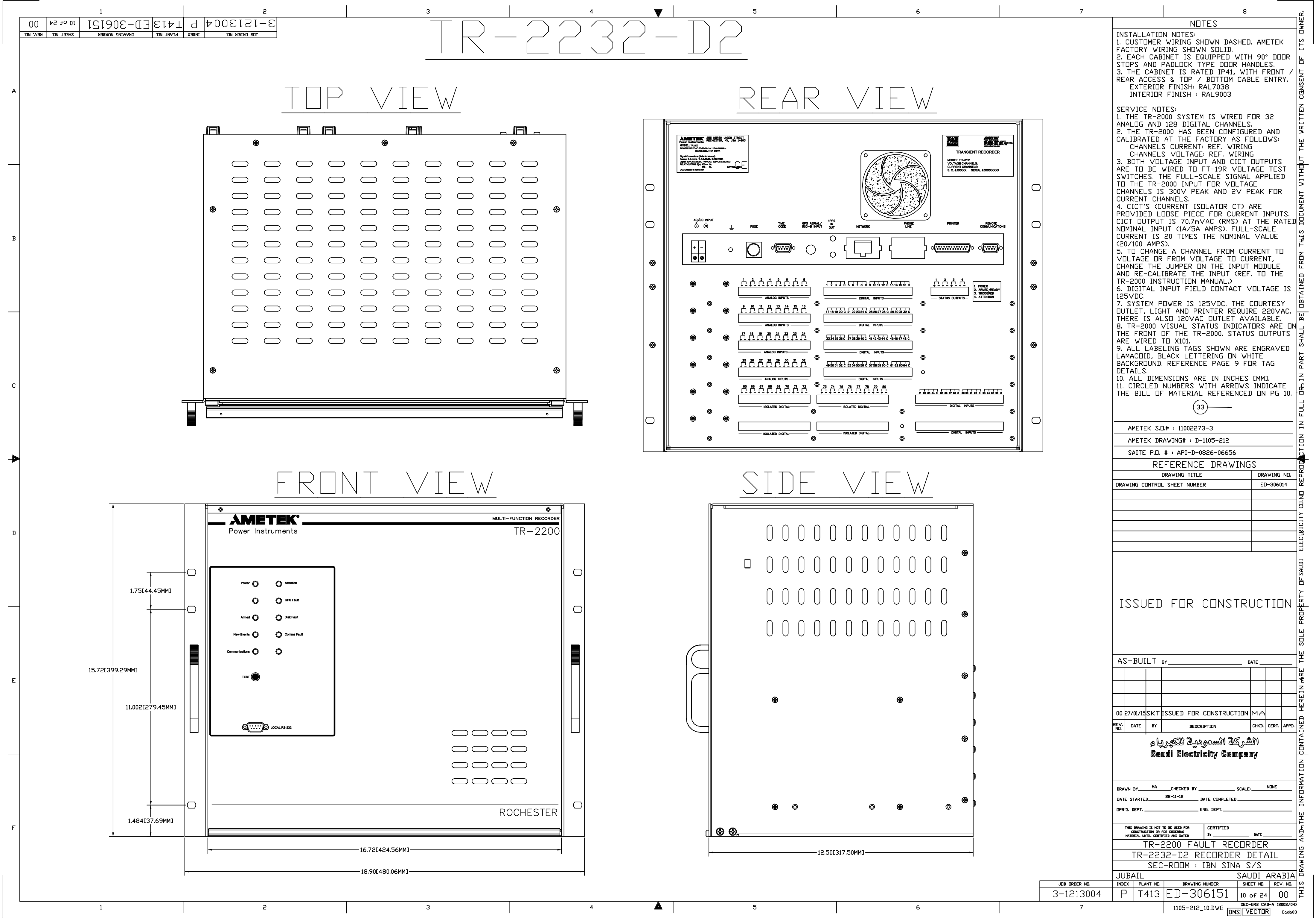
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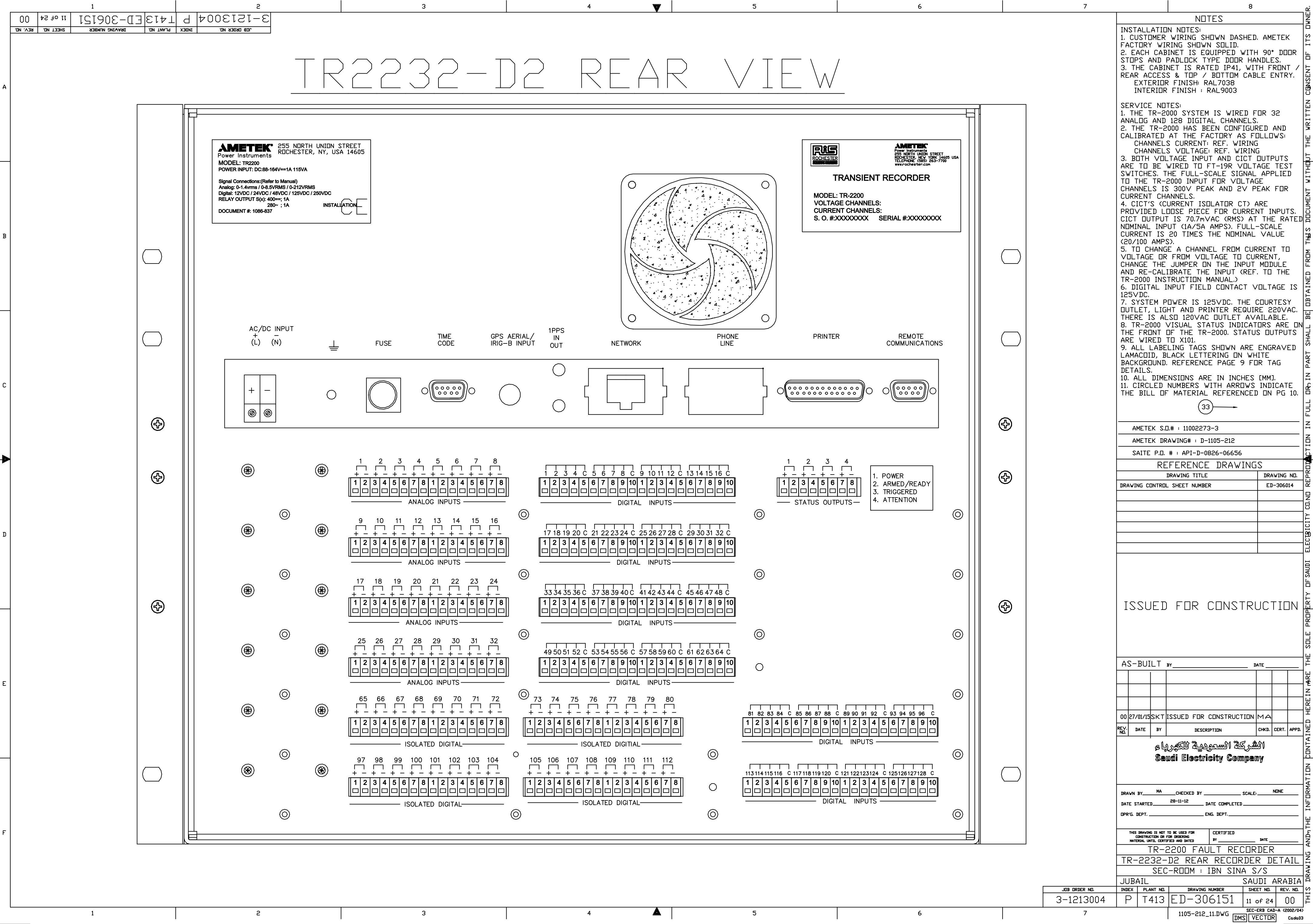
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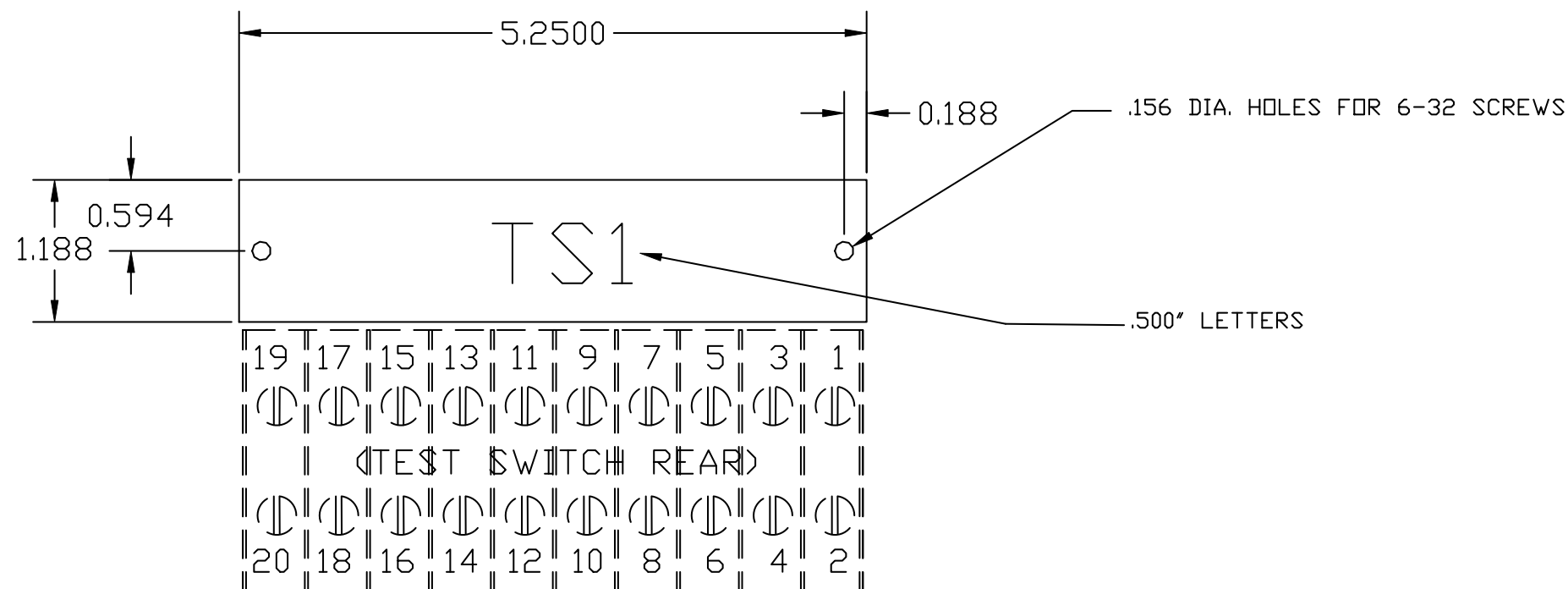




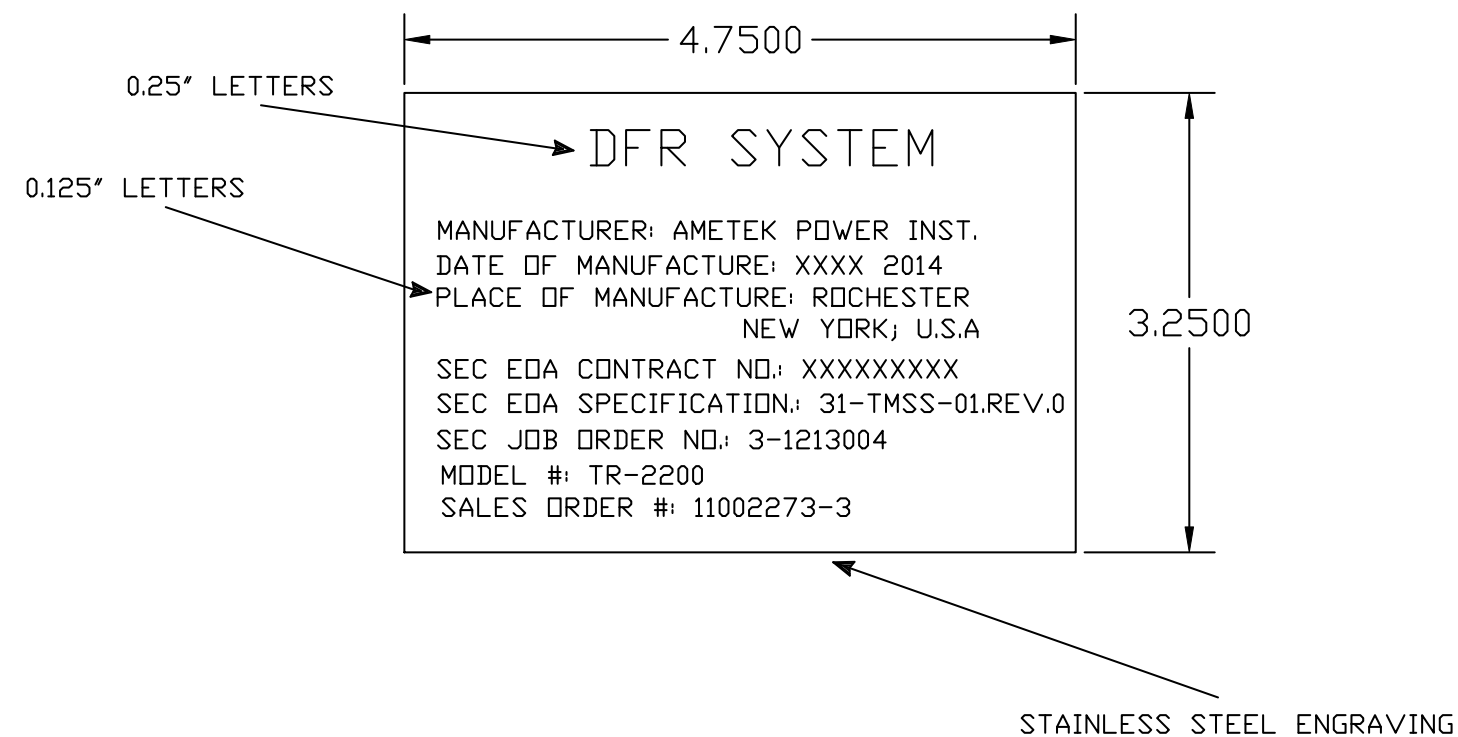
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JOB ORDER NO.	3-1213004	DRAWING NUMBER	ED-306151
INDEX	P T413	SHEET NO.	13 of 24
PLANT NO.		REV. NO.	00

TAG DETAILS

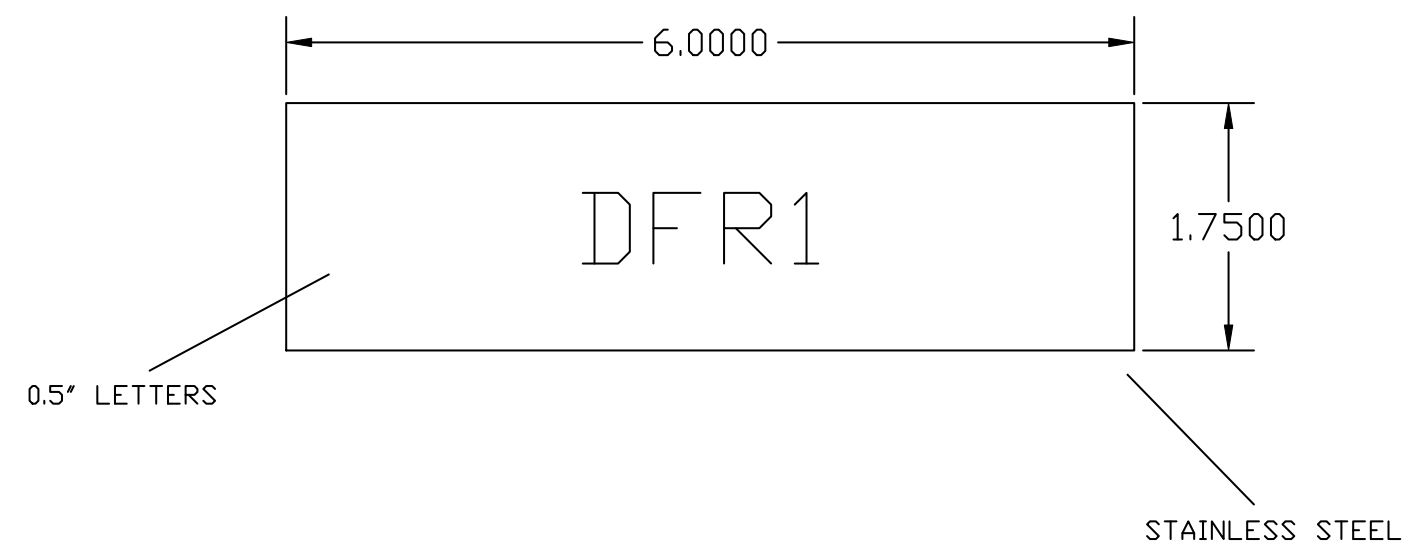
DETAIL C



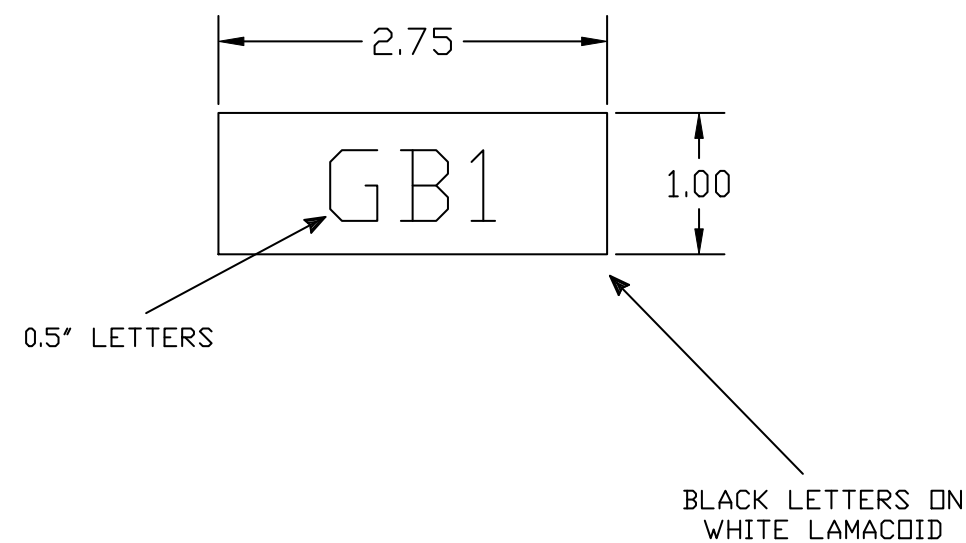
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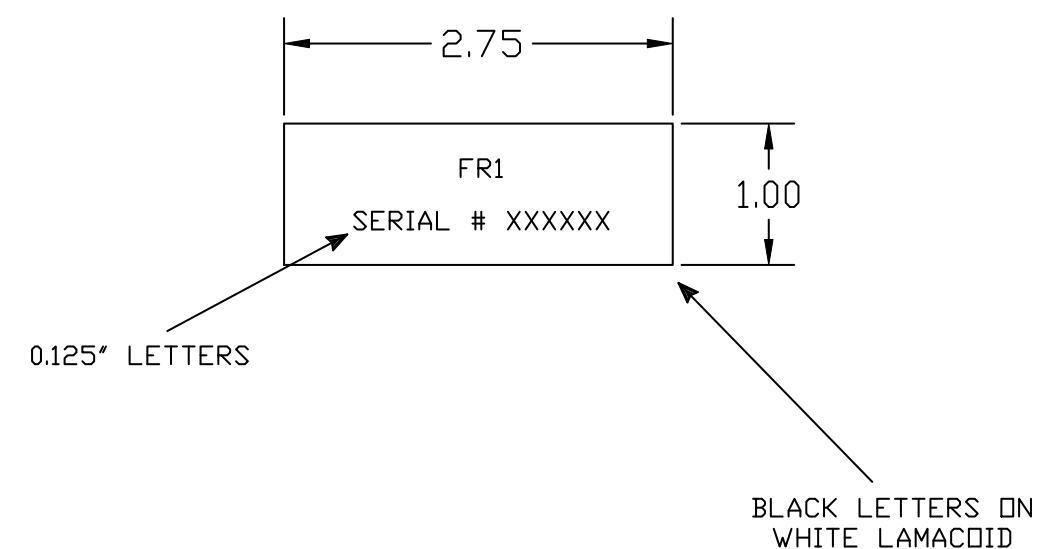
DETAIL F



DETAIL D



DETAIL G



NOTES

INSTALLATION NOTES:

1. CUSTOMER WIRING SHOWN DASHED. AMETEK FACTORY WIRING SHOWN SOLID.
2. EACH CABINET IS EQUIPPED WITH 90° DOOR STOPS AND PADLOCK TYPE DOOR HANDLES.
3. THE CABINET IS RATED IP41, WITH FRONT / REAR ACCESS & TOP / BOTTOM CABLE ENTRY.
EXTERIOR FINISH: RAL7038
INTERIOR FINISH : RAL9003

SERVICE NOTES:

1. THE TR-2000 SYSTEM IS WIRED FOR 32 ANALOG AND 128 DIGITAL CHANNELS.
2. THE TR-2000 HAS BEEN CONFIGURED AND CALIBRATED AT THE FACTORY AS FOLLOWS:
CHANNELS CURRENT; REF. WIRING
CHANNELS VOLTAGE; REF. WIRING
3. BOTH VOLTAGE INPUT AND CICT OUTPUTS ARE TO BE WIRED TO FT-19R VOLTAGE TEST SWITCHES, THE FULL-SCALE SIGNAL APPLIED TO THE TR-2000 INPUT FOR VOLTAGE CHANNELS IS 300V PEAK AND 2V PEAK FOR CURRENT CHANNELS.
4. CICT'S (CURRENT ISOLATOR CT) ARE PROVIDED LOOSE PIECE FOR CURRENT INPUTS. CICT OUTPUT IS 70.7mVAC (RMS) AT THE RATED NOMINAL INPUT (1A/5A AMPS). FULL-SCALE CURRENT IS 20 TIMES THE NOMINAL VALUE (20/100 AMPS).
5. TO CHANGE A CHANNEL FROM CURRENT TO VOLTAGE OR FROM VOLTAGE TO CURRENT, CHANGE THE JUMPER ON THE INPUT MODULE AND RE-CALIBRATE THE INPUT (REF. TO THE TR-2000 INSTRUCTION MANUAL.)
6. DIGITAL INPUT FIELD CONTACT VOLTAGE IS 125VDC.
7. SYSTEM POWER IS 125VAC, THE COURTESY OUTLET, LIGHT AND PRINTER REQUIRE 220VAC. THERE IS ALSO 120VAC OUTLET AVAILABLE.
8. TR-2000 VISUAL STATUS INDICATORS ARE ON THE FRONT OF THE TR-2000. STATUS OUTPUTS ARE WIRED TO X101.
9. ALL LABELING TAGS SHOWN ARE ENGRAVED LAMACOID, BLACK LETTERING ON WHITE BACKGROUND. REFERENCE PAGE 9 FOR TAG DETAILS.
10. ALL DIMENSIONS ARE IN INCHES [MM].
11. CIRCLED NUMBERS WITH ARROWS INDICATE THE BILL OF MATERIAL REFERENCED ON PG 10.

AMETEK S.O.# : 11002273-3	
AMETEK DRAWING# : D-1105-212	
SAITE P.O. # : API-D-0826-06656	
REFERENCE DRAWINGS	
DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET NUMBER	ED-306014

ISSUED FOR CONSTRUCTION								
AS-BUILT BY _____ DATE _____								
00	27/01/15	SKT	ISSUED FOR CONSTRUCTION			MA		
REV. NO.	DATE	BY	DESCRIPTION			CHKD.	CERT.	APP'D.

الشركة السعودية للكهرباء Saudi Electricity Company	
DRAWN BY: _____	CHECKED BY: _____
SCALE: _____ NONE	
DATE STARTED: _____ 28-11-12	DATE COMPLETED: _____
DPR/G. DEPT. _____	ENG. DEPT. _____
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TR-2200 FAULT RECORDER SYSTEM TAG DETAILS SEC-ROOM : IBN SINA S/S	

JOB ORDER NO.		INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
3-1213004		P	T413	ED-306151	13 of 24	00
7				1105-212_13.DWG	SEC-ERB CAD-A (2002/04)	
				DMS	VECTOR	Code03

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1		2		3		4		5		6		7		8	
JOB ORDER NO.		INDEX		PLANT NO.		DRAWING NUMBER		SHEET NO.		REV. NO.		REV. NO.		REV. NO.	
3-1213004		P		T413		ED-306151		14 of 24		00		00		00	

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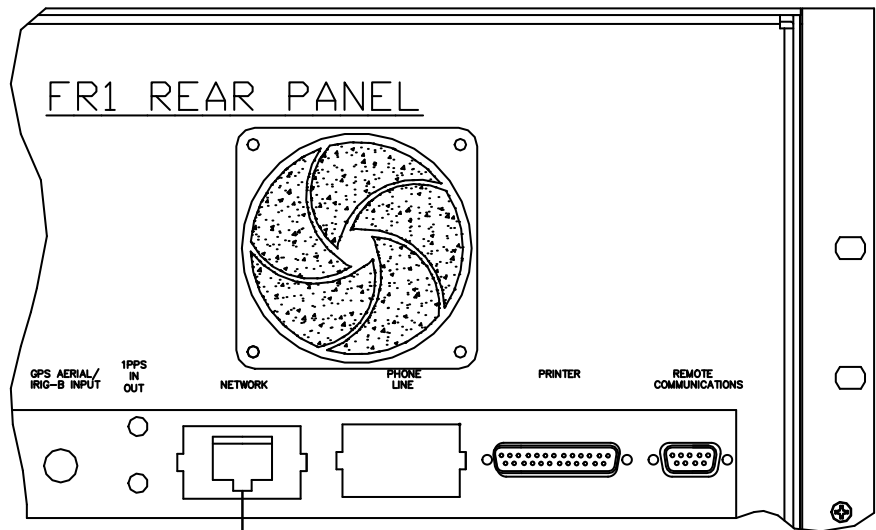
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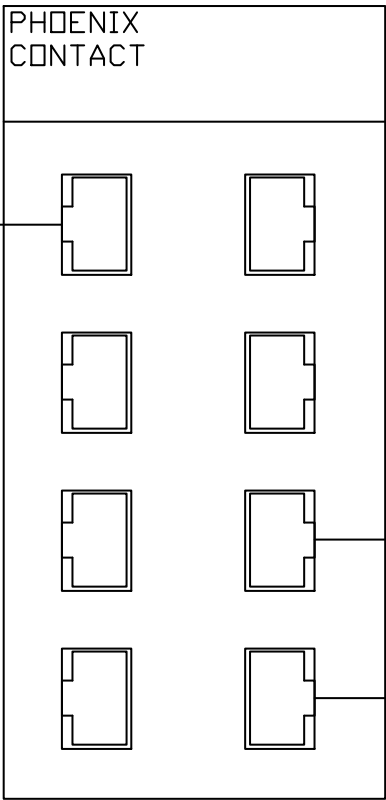
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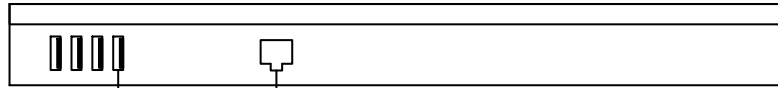
SYSTEM PERIPHERAL CONNECTIONS (MODEM / ETHERNET / PRINTER)



ETHERNET SWITCH
ESW1
LOCATED IN DFR1

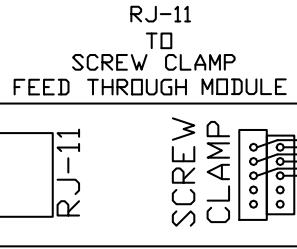
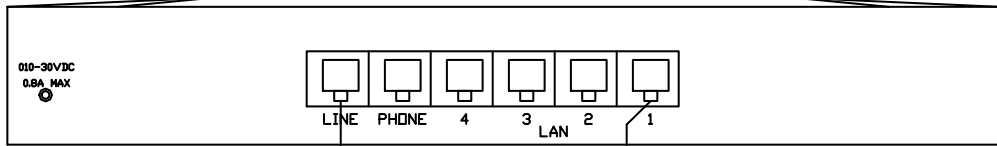


(SAITE PROVIDED)
INFORMATION CAPTURE
LAPTOP COMPUTER



HP
COLOR LASERJET
PRINTER

MODEM
3COM ETHERNET MODEM (REAR VIEW)
LOCATED IN DFR1



PHONE
LINE
CONNECTION

NOTES

INSTALLATION NOTES:
1. CUSTOMER WIRING SHOWN DASHED. AMETEK FACTORY WIRING SHOWN SOLID.
2. EACH CABINET IS EQUIPPED WITH 90° DOOR STOPS AND PADLOCK TYPE DOOR HANDLES.
3. THE CABINET IS RATED IP41, WITH FRONT / REAR ACCESS & TOP / BOTTOM CABLE ENTRY.
EXTERIOR FINISH: RAL7038
INTERIOR FINISH: RAL9003

SERVICE NOTES:
1. THE TR-2000 SYSTEM IS WIRED FOR 32 ANALOG AND 128 DIGITAL CHANNELS.
2. THE TR-2000 HAS BEEN CONFIGURED AND CALIBRATED AT THE FACTORY AS FOLLOWS:
CHANNELS CURRENT: REF. WIRING
CHANNELS VOLTAGE: REF. WIRING
3. BOTH VOLTAGE INPUT AND CICT OUTPUTS ARE TO BE WIRED TO FT-19R VOLTAGE TEST SWITCHES. THE FULL-SCALE SIGNAL APPLIED TO THE TR-2000 INPUT FOR VOLTAGE CHANNELS IS 300V PEAK AND 2V PEAK FOR CURRENT CHANNELS.
4. CICT'S (CURRENT ISOLATOR CT) ARE PROVIDED LOOSE PIECE FOR CURRENT INPUTS. CICT OUTPUT IS 70.7mVAC (RMS) AT THE RATED NOMINAL INPUT (1A/5A AMPS). FULL-SCALE CURRENT IS 20 TIMES THE NOMINAL VALUE (20/100 AMPS).
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6. DIGITAL INPUT FIELD CONTACT VOLTAGE IS 125VDC.
7. SYSTEM POWER IS 125VDC. THE COURTESY OUTLET, LIGHT AND PRINTER REQUIRE 220VAC. THERE IS ALSO 120VAC OUTLET AVAILABLE.
8. TR-2000 VISUAL STATUS INDICATORS ARE ON THE FRONT OF THE TR-2000. STATUS OUTPUTS ARE WIRED TO X101.
9. ALL LABELING TAGS SHOWN ARE ENGRAVED LAMACOID, BLACK LETTERING ON WHITE BACKGROUND. REFERENCE PAGE 9 FOR TAG DETAILS.
10. ALL DIMENSIONS ARE IN INCHES [MM].
11. CIRCLED NUMBERS WITH ARROWS INDICATE THE BILL OF MATERIAL REFERENCED ON PG 10.

33

AMETEK S.O.# : 11002273-3

AMETEK DRAWING# : D-1105-212

SAITE P.O. # : API-D-0826-06656

REFERENCE DRAWINGS

DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET NUMBER	ED-306014

ISSUED FOR CONSTRUCTION

AS-BUILT BY: DATE:

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00	27/01/15	SKT	ISSUED FOR CONSTRUCTION	MA					
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APP'D.			

الشركة السعودية للكهرباء
Saudi Electricity Company

DRAWN BY: MA CHECKED BY: SCALE: NONE
DATE STARTED: 28-11-12 DATE COMPLETED:
DPR'G. DEPT.: ENG. DEPT.:

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CERTIFIED BY: DATE:

TR-2200 FAULT RECORDER

SYSTEM PERIPHERAL CONNECTIONS

SEC-ROOM : IBN SINA S/S

JUBAIL SAUDI ARABIA

JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
3-1213004	P	T413	ED-306151	14 of 24	00

1105-212_14.DWG

SEC-ERB CAD-A (2002/04)

DMS VECTOR

Code03

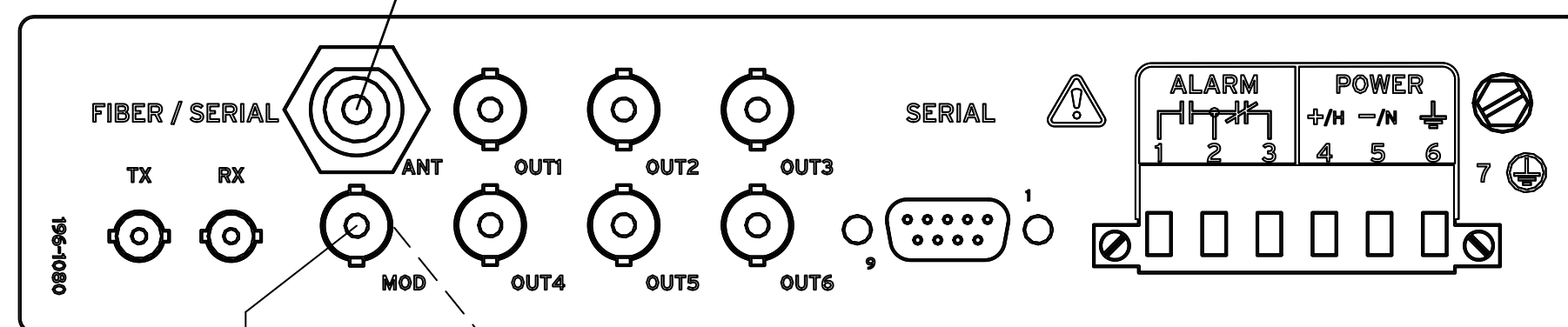
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2		1	
JOB ORDER NO.	3-1213004	DRAWING NUMBER	ED-306151
INDEX	P T413	SHEET NO.	15 of 24
PLANT NO.		REV. NO.	00

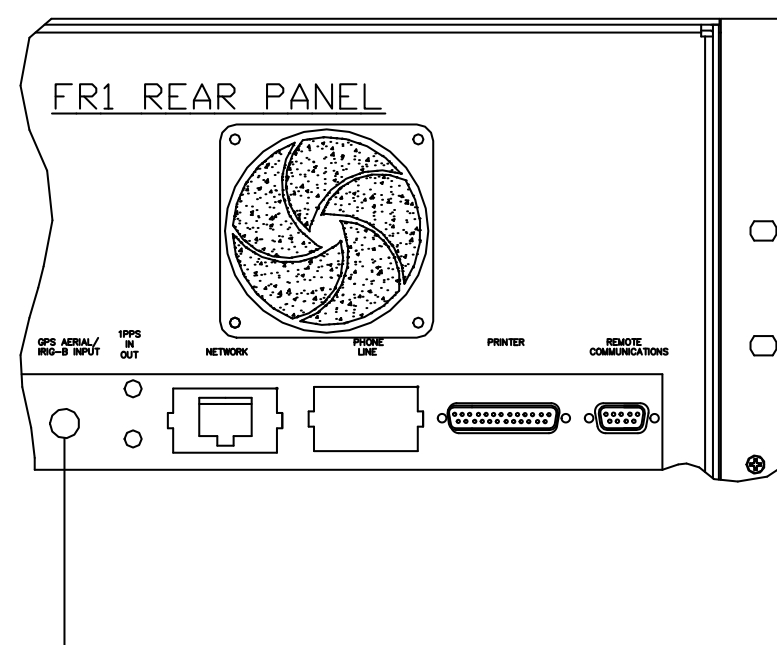
SYSTEM PERIPHERAL CONNECTIONS

SEL 2407 GPS RECEIVER VIEW

LOCATED IN DFR1



BNC type connector

GPS
ANTENNA

150 ft RG-6 type cable
(max. 150ft)

NOTE: ANTENNA SHALL BE INSTALLED
OUTSIDE OF THE CONTROL ROOM

NOTES

INSTALLATION NOTES:

- INSTALLATION NOTES:
1. CUSTOMER WIRING SHOWN DASHED. AMETEK FACTORY WIRING SHOWN SOLID.
 2. EACH CABINET IS EQUIPPED WITH 90° DOOR STOPS AND PADLOCK TYPE DOOR HANDLES.
 3. THE CABINET IS RATED IP41, WITH FRONT / REAR ACCESS & TOP / BOTTOM CABLE ENTRY.
- EXTERIOR FINISH: RAL7038
INTERIOR FINISH: RAL9003

SERVICE NOTES:

1. THE TR-2000 SYSTEM IS WIRED FOR 32 ANALOG AND 128 DIGITAL CHANNELS.
2. THE TR-2000 HAS BEEN CONFIGURED AND CALIBRATED AT THE FACTORY AS FOLLOWS:
 - CHANNELS CURRENT: REF. WIRING
 - CHANNELS VOLTAGE: REF. WIRING
3. BOTH VOLTAGE INPUT AND CICT OUTPUTS ARE TO BE WIRED TO FT-19R VOLTAGE TEST SWITCHES. THE FULL-SCALE SIGNAL APPLIED TO THE TR-2000 INPUT FOR VOLTAGE CHANNELS IS 300V PEAK AND 2V PEAK FOR CURRENT CHANNELS.
4. CICT'S (CURRENT ISOLATOR CT) ARE PROVIDED LOOSE PIECE FOR CURRENT INPUTS. CICT OUTPUT IS 70.7mVAC (RMS) AT THE RATE NOMINAL INPUT (1A/5A AMPS). FULL-SCALE CURRENT IS 20 TIMES THE NOMINAL VALUE (20/100 AMPS).
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6. DIGITAL INPUT FIELD CONTACT VOLTAGE IS 125VDC.
7. SYSTEM POWER IS 125VDC. THE COURTESY OUTLET, LIGHT AND PRINTER REQUIRE 220VAC. THERE IS ALSO 120VAC OUTLET AVAILABLE.
8. TR-2000 VISUAL STATUS INDICATORS ARE ON THE FRONT OF THE TR-2000. STATUS OUTPUTS ARE WIRED TO X101.
9. ALL LABELING TAGS SHOWN ARE ENGRAVED LAMACOID, BLACK LETTERING ON WHITE BACKGROUND. REFERENCE PAGE 9 FOR TAG DETAILS.
10. ALL DIMENSIONS ARE IN INCHES [MM].
11. CIRCLED NUMBERS WITH ARROWS INDICATE THE BILL OF MATERIAL REFERENCED ON PG 10.

33

AMETEK S.O.# : 11002273-3

AMETEK DRAWING# : D-1105-212

SAITE P.O. # : API-D-0826-06656

REFERENCE DRAWINGS

DRAWING TITLE		DRAWING NO.
DRAWING CONTROL SHEET NUMBER		ED-306014

ISSUED FOR CONSTRUCTION

AS-BUILT	BY	DATE
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00	27/01/15	SKT	ISSUED FOR CONSTRUCTION	MA		
REV.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APP.

الشركة السعودية للكهرباء
Saudi Electricity Company

DRAWN BY MA CHECKED BY _____ SCALE: NONE
DATE STARTED 28-11-12 DATE COMPLETED _____
DPR'G. DEPT. _____ ENG. DEPT. _____

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TR-2200 FAULT RECORDER

GPS / IRIG-B INPUT, FR1

SEC-ROOM : IBN SINA S/S

JUBAIL	SAUDI ARABIA
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INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
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JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
3-1213004	P	T413	ED-306151	15 of 24	00

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1105-212_15.DWG

SEC-ERB CAD-A (2002/01/15)

DMS VECTOR

Cad

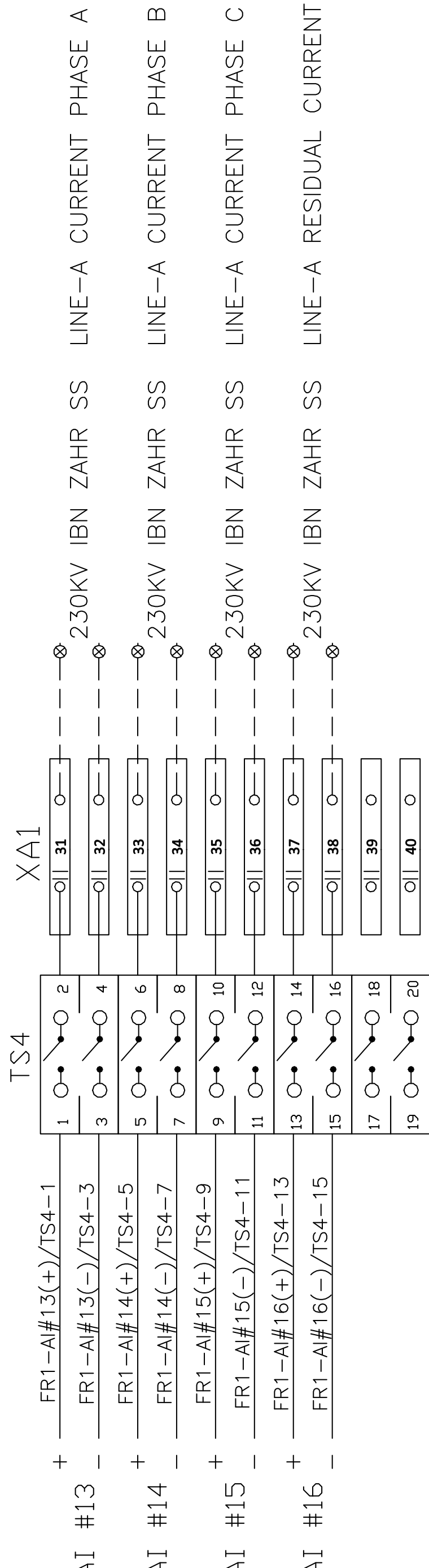
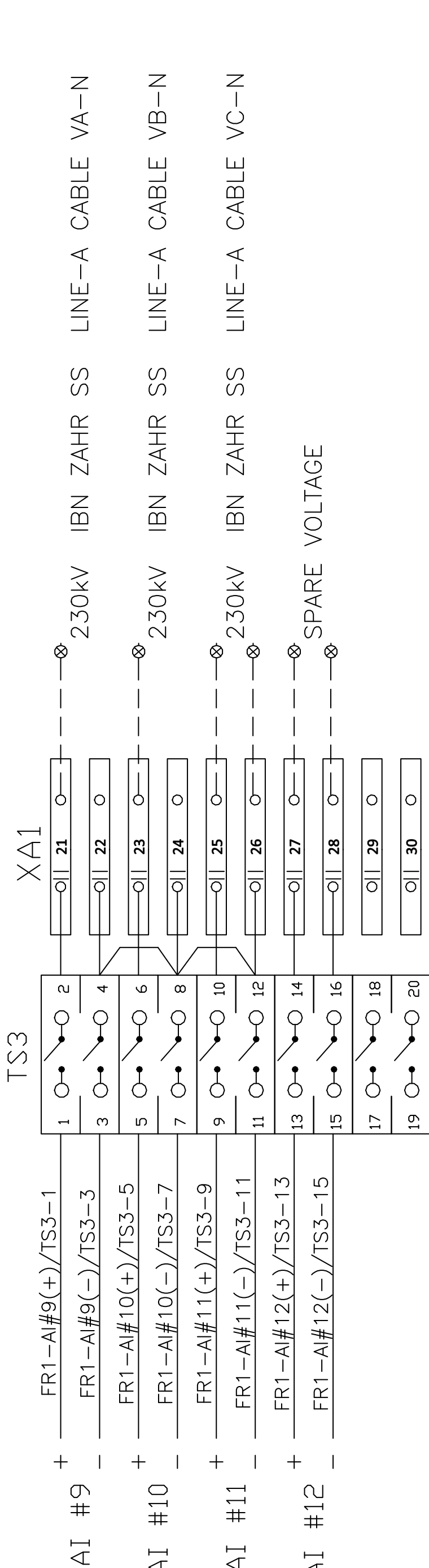
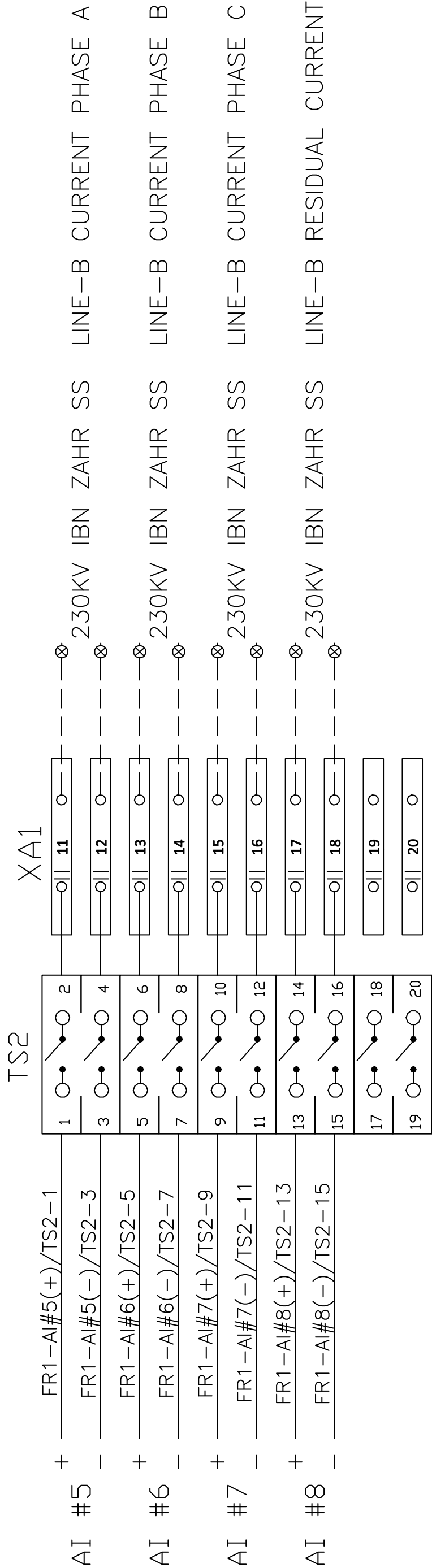
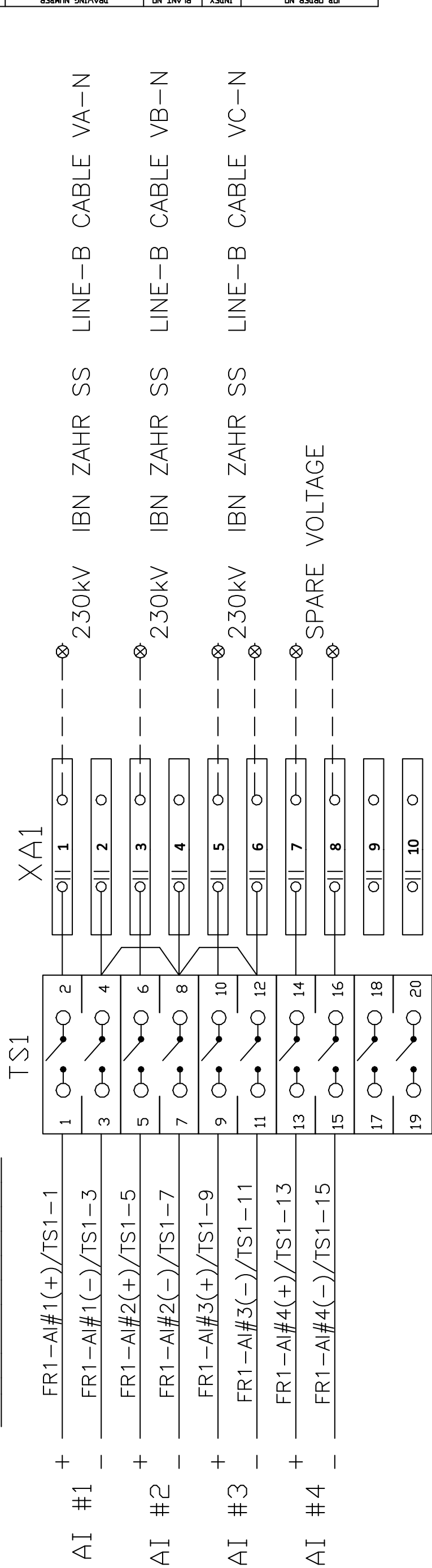
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ANALOG INPUTS

WIRE MARKER

FIELD CONNECTIONS

JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
3-1213004	P	T413	ED-306151	16 of 24	00



NOTE : ABB FT-1 TYPE TEST SWITCH

JUBAIL					SAUDI ARABIA						
JOB ORDER NO.		INDEX		PLANT NO.		DRAWING NUMBER		SHEET NO.		REV. NO.	
3-1213004		P		T413		ED-306151		16 of 24		00	
SEC-ERB CAD-A (2002/04)											
1105-212_16.DWG											
DMS VECTOR											
Code03											
THIS DRAWING AND-THE INFORMATION CONTAINED HEREIN ARE THE SOLE PROPERTY OF SAUDI ELECTRICITY AND NO REPRODUCTION IN FULL OR IN PART SHALL BE OBTAINED FROM THIS DOCUMENT WITHOUT THE WRITTEN CONSENT OF ITS OWNER.											
ISSUED FOR CONSTRUCTION											
AS-BUILT BY _____ DATE _____											
00 27/01/15 SKT ISSUED FOR CONSTRUCTION MA _____											
REV. DATE BY DESCRIPTION CHKD. CERT. APPD.											
الشركة السعودية للكهرباء Saudi Electricity Company											
DRAWN BY: MA _____ CHECKED BY: _____ SCALE: _____ NONE _____											
DATE STARTED: 28-11-12 DATE COMPLETED: _____											
DPR/G. DEPT.: _____ ENG. DEPT.: _____											
THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION OR FOR ORDERING MATERIAL UNTIL CERTIFIED AND DATED											
CERTIFIED BY: _____ DATE: _____											
TR-2200 FAULT RECORDER											
FR1 ANALOG INPUTS 1-16 WIRING											
SEC-ROOM : IBN SINA S/S											
GENERAL NOTES: 1. 24 CICT'S ARE RATED 1 AMP NOMINAL CURRENT. CICT'S ARE SUPPLIED LOOSE & MOUNTED REMOTELY. 2. DIGITAL INPUT FIELD CONTACT VOLTAGE IS 125VDC AND IS DISTRIBUTED ON X1-C. 3. LABEL NOTES: AI REFERS TO ANALOG INPUT DI REFERS TO DIGITAL INPUT R REFERS TO RED Y REFERS TO YELLOW BLU REFERS TO BLUE BLK REFERS TO BLACK G REFERS TO GRAY 4. WIRE MARKERS ARE LOCATED AT BOTH ENDS OF EVERY WIRE DESIGNATING WIRE ORIGIN AND DESTINATION. WIRE MARKERS ARE HEAT SHRINK TYPE. 5. WIRE AT THE REAR OF THE RECORDER AND THE PHOENIX TERMINAL BLOCKS ARE TERMINATED WITH TERMINAL PIN LUGS. 6. ALL DIGITAL WIRING IS 18AWG 600V PVC TYPE WIRE. ALL ANALOG WIRING IS 18AWG 600V PVC TYPE WIRE. ALL 15 AMP POWER DISTRIBUTION WIRING IS 14AWG 600V PVC TYPE WIRE. ALL 3AMP POWER DISTRIBUTION WIRING IS 18AWG 600V PVC TYPE WIRE. 7. WIRING THAT IS CONTINUED ON ANOTHER SHEET IS DENOED WITH THE SHEET NUMBER AND LOCATION IN A HEXAGON AS FOLLOWS: 8. PRIMARY FAN(F1) ARE CONTROLLED BY F1SC SPEED CONTROLLER SET TO ATTAIN FULL SPEED WHEN THE TEMPERATURE REACHES 40°C.											
TS1-1/TR1-AI#1+ TS1-1/TR1-AI#1+											
16 AI											

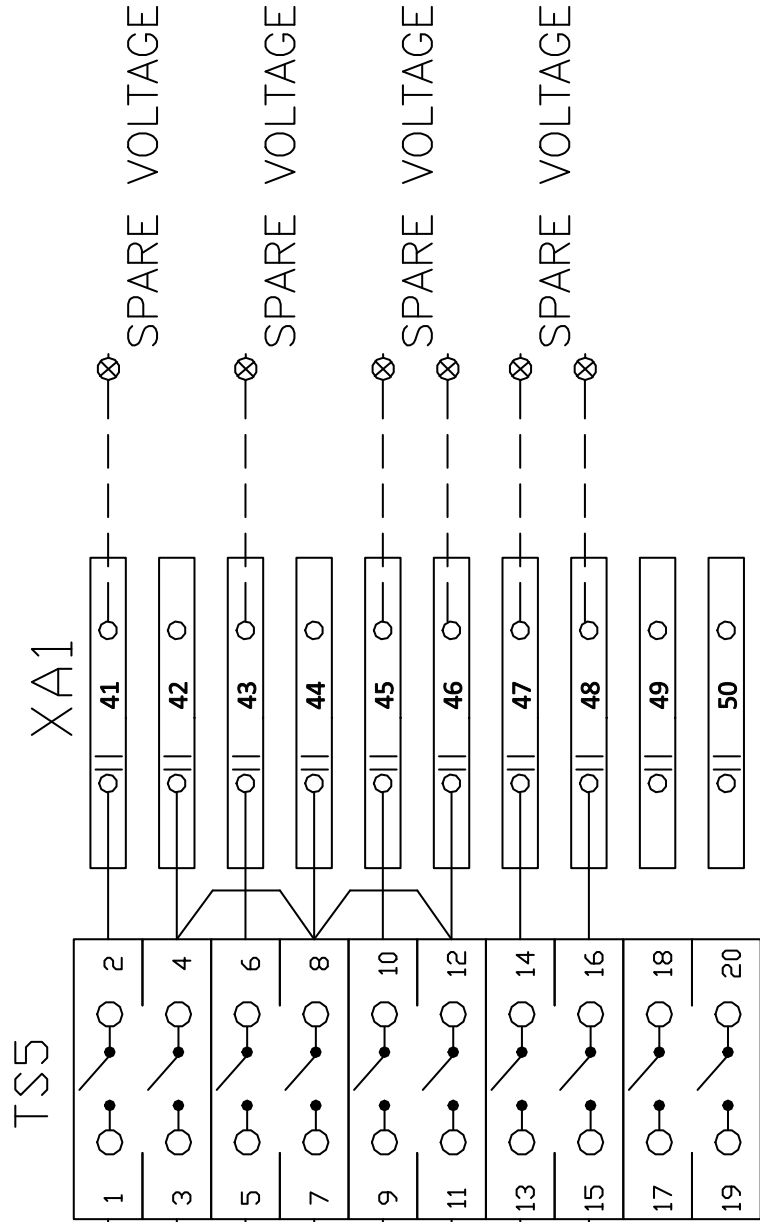
ANALOG INPUTS

WIRE MARKER

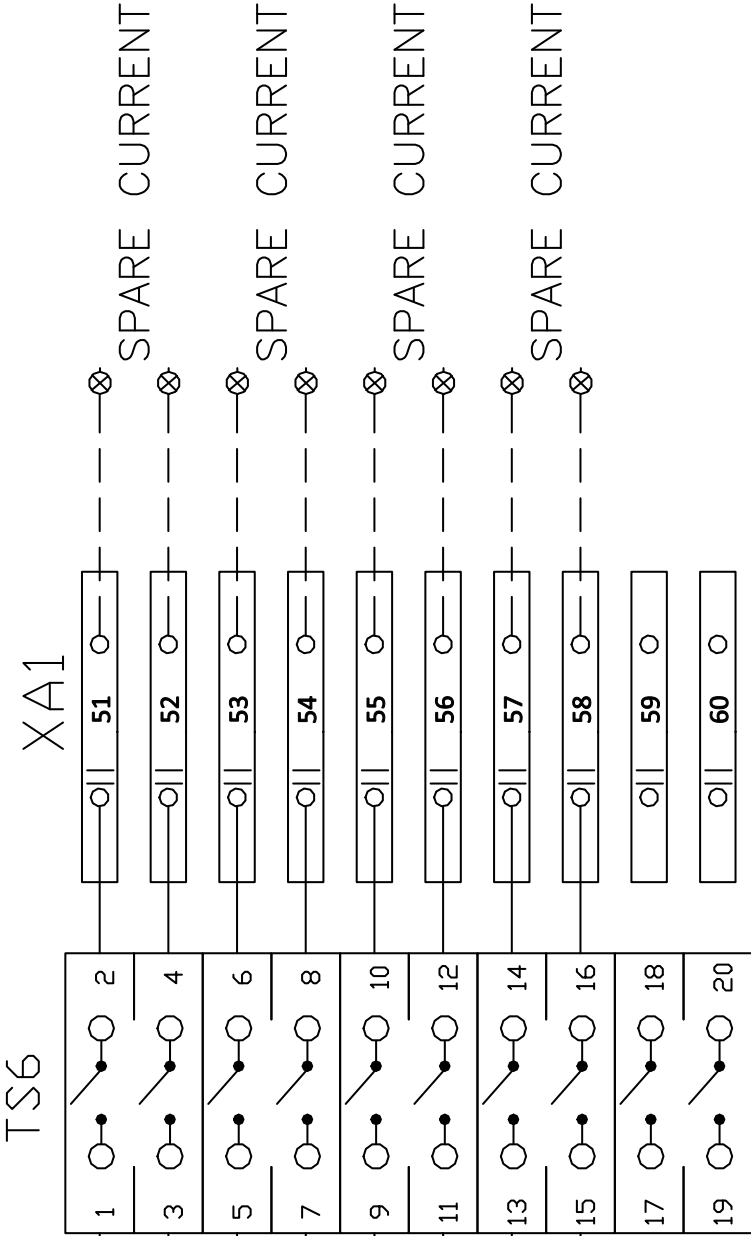
FIELD CONNECTIONS

F E D C B A

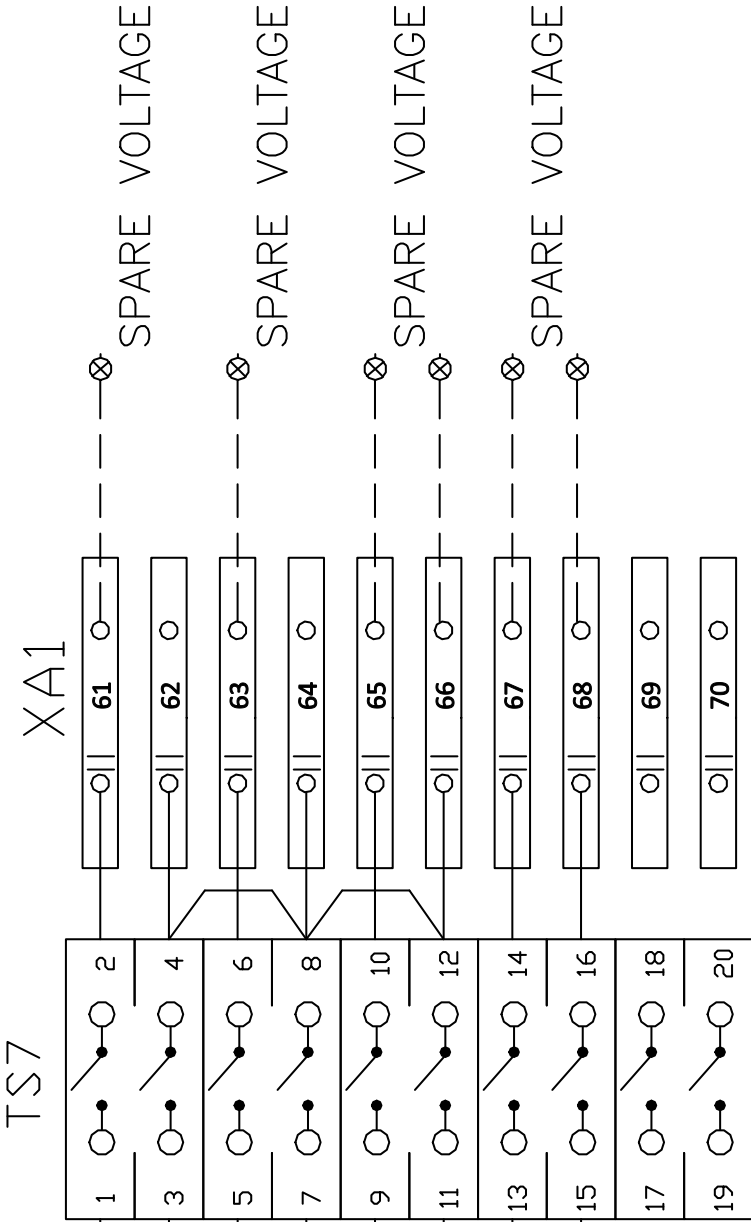
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AI #18 - FR1-AI#17(-)/TS5-3
AI #19 + FR1-AI#18(+)/TS5-5
AI #20 - FR1-AI#18(-)/TS5-7
AI #21 + FR1-AI#19(+)/TS5-9
AI #22 - FR1-AI#19(-)/TS5-11
AI #23 + FR1-AI#20(+)/TS5-13
AI #24 - FR1-AI#20(-)/TS5-15



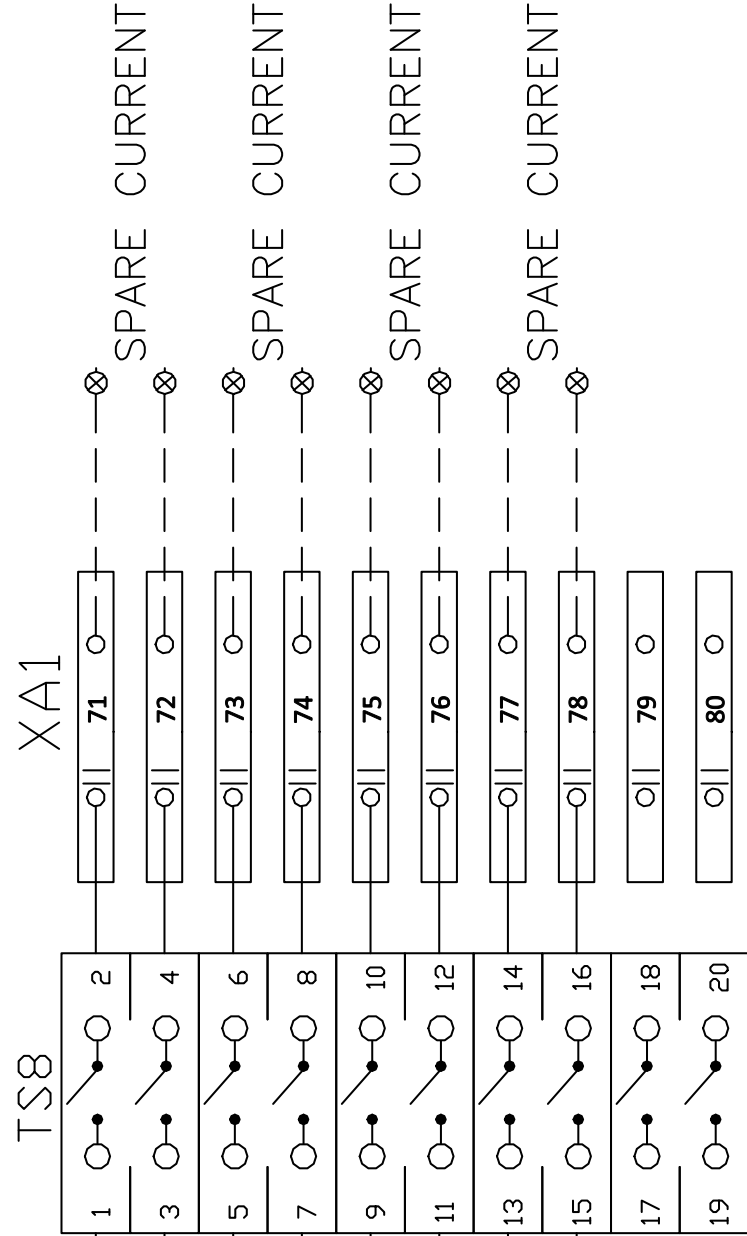
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AI #22 - FR1-AI#21(-)/TS6-3
AI #23 + FR1-AI#22(+)/TS6-5
AI #24 - FR1-AI#22(-)/TS6-7
AI #25 + FR1-AI#23(+)/TS6-9
AI #26 - FR1-AI#23(-)/TS6-11
AI #27 + FR1-AI#24(+)/TS6-13
AI #28 - FR1-AI#24(-)/TS6-15



AI #25 + FR1-AI#25(+)/TS7-1
AI #26 - FR1-AI#25(-)/TS7-3
AI #27 + FR1-AI#26(+)/TS7-5
AI #28 - FR1-AI#26(-)/TS7-7
AI #29 + FR1-AI#27(+)/TS7-9
AI #30 - FR1-AI#27(-)/TS7-11
AI #31 + FR1-AI#28(+)/TS7-13
AI #32 - FR1-AI#28(-)/TS7-15



AI #29 + FR1-AI#29(+)/TS8-1
AI #30 - FR1-AI#29(-)/TS8-3
AI #31 + FR1-AI#30(+)/TS8-5
AI #32 - FR1-AI#30(-)/TS8-7
AI #33 + FR1-AI#31(+)/TS8-9
AI #34 - FR1-AI#31(-)/TS8-11
AI #35 + FR1-AI#32(+)/TS8-13
AI #36 - FR1-AI#32(-)/TS8-15



NOTE : ABB FT-1 TYPE TEST SWITCH

ISSUED FOR CONSTRUCTION

AS-BUILT BY DATE

00 27/01/15 SKT ISSUED FOR CONSTRUCTION MA

الشركة السعودية للكهرباء
Saudi Electricity Company

DRAWN BY: MA CHECKED BY: SCALE: NONE
DATE STARTED: 28-11-12 DATE COMPLETED:
DPR/G. DEPT.: ENG. DEPT.:

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION OR FOR ORDERING MATERIAL UNTIL CERTIFIED AND DATED

TR-2200 FAULT RECORDER
FR1 ANALOG CHANNEL 17-32 WIRING
SEC-ROOM : IBN SINA S/S

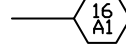
JUBAIL SAUDI ARABIA

JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
3-1213004	P	T413	ED-306151	17 of 24	00

GENERAL NOTES:
1. 24 CICT'S ARE RATED 1 AMP NOMINAL CURRENT. CICT'S ARE SUPPLIED LOOSE & MOUNTED REMOTELY.
2. DIGITAL INPUT FIELD CONTACT VOLTAGE IS 125VDC AND IS DISTRIBUTED ON X1-C.
3. LABEL NOTES:
AI REFERS TO ANALOG INPUT
DI REFERS TO DIGITAL INPUT
R REFERS TO RED
Y REFERS TO YELLOW
BLU REFERS TO BLUE
BLK REFERS TO BLACK
G REFERS TO GRAY
4. WIRE MARKERS ARE LOCATED AT BOTH ENDS OF EVERY WIRE DESIGNATING WIRE ORIGIN AND DESTINATION. WIRE MARKERS ARE HEAT SHRINK TYPE.

TS1-1/TR1-AI#1+ TS1-1/TR1-AI#1+

5. WIRE AT THE REAR OF THE RECORDER AND THE PHOENIX TERMINAL BLOCKS ARE TERMINATED WITH TERMINAL PIN LUGS.
6. ALL DIGITAL WIRING IS 18AWG 600V PVC TYPE WIRE.
ALL ANALOG WIRING IS 18AWG 600V PVC TYPE WIRE.
ALL 15 AMP POWER DISTRIBUTION WIRING IS 14AWG 600V PVC TYPE WIRE.
ALL 3AMP POWER DISTRIBUTION WIRING IS 18AWG 600V PVC TYPE WIRE.
7. WIRING THAT IS CONTINUED ON ANOTHER SHEET IS DENOTED WITH THE SHEET NUMBER AND LOCATION IN A HEXAGON AS FOLLOWS:



8. PRIMARY FAN(F1) ARE CONTROLLED BY F1SC SPEED CONTROLLER SET TO ATTAIN FULL SPEED WHEN THE TEMPERATURE REACHES 40°C.

AMETEK S.O.# : 11002273-3
AMETEK DRAWING# : D-1105-212
SAITE P.D. # : API-D-0826-06656

REFERENCE DRAWINGS	
DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET NUMBER	ED-306014

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JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
3-1213004	P	T413	ED-306151	18 of 24	00

A

B

C

D

E

F

FIELD CONNECTIONS

WIRE MARKER

DIGITAL INPUTS

PHOENIX MTK TB

FR1DI-1(+)	FR1DI-1/X1-1	G	1	○	1	230 KV IBN ZAHR LINE-B RELAY SET-1 TRIP	DWG. NO.	,SHT:
FR1DI-2(+)	FR1DI-2/X1-2	G	2	○	2	230 KV IBN ZAHR LINE-B RELAY SET-1 DIST XMIT		
FR1DI-3(+)	FR1DI-3/X1-3	G	3	○	3	230 KV IBN ZAHR LINE-B RELAY SET-1 DIST REC		
FR1DI-4(+)	FR1DI-4/X1-4	G	4	○	4	230 KV IBN ZAHR LINE-B RELAY SET-1 21/67N FORWARD START		
FR1DI-5(+)	FR1DI-5/X1-5	G	5	○	5	230 KV IBN ZAHR LINE-B RELAY SET-1 21/67N BACKWARD START		
FR1DI-6(+)	FR1DI-6/X1-6	G	6	○	6	230 KV IBN ZAHR LINE-B RELAY SET-1 DEF XMIT		
FR1DI-7(+)	FR1DI-7/X1-7	G	7	○	7	230 KV IBN ZAHR LINE-B RELAY SET-1 DEF REC		
FR1DI-8(+)	FR1DI-8/X1-8	G	8	○	8	230 KV IBN ZAHR LINE-B RELAY SET-1 BKR FAIL CH 1 REC		
FR1DI-9(+)	FR1DI-9/X1-9	G	9	○	9	230 KV IBN ZAHR LINE-B RELAY SET-2 TRIP		
FR1DI-10(+)	FR1DI-10/X1-10	G	10	○	10	230 KV IBN ZAHR LINE-B RELAY SET-2 DIST XMIT		
FR1DI-11(+)	FR1DI-11/X1-11	G	11	○	11	230 KV IBN ZAHR LINE-B RELAY SET-2 DIST REC		
FR1DI-12(+)	FR1DI-12/X1-12	G	12	○	12	230 KV IBN ZAHR LINE-B RELAY SET-2 21/67N FORWARD START		
FR1DI-13(+)	FR1DI-13/X1-13	G	13	○	13	230 KV IBN ZAHR LINE-B RELAY SET-2 21/67N BACKWARD START		
FR1DI-14(+)	FR1DI-14/X1-14	G	14	○	14	230 KV IBN ZAHR LINE-B RELAY SET-2 DEF XMIT		
FR1DI-15(+)	FR1DI-15/X1-15	G	15	○	15	CROSS TRIGGER	XST10-17	23 BS
FR1DI-16(+)	FR1DI-16/X1-16	G	16	○	16	230 KV IBN ZAHR LINE-B RELAY SET-2 DEF REC		
FR1DI-17(+)	FR1DI-17/X1-17	G	17	○	17	230 KV IBN ZAHR LINE-B RELAY SET-2 BKR FAIL CH 2 REC		
FR1DI-18(+)	FR1DI-18/X1-18	G	18	○	18	230 KV IBN ZAHR LINE-B PD TRIP CH 1 REC		
FR1DI-19(+)	FR1DI-19/X1-19	G	19	○	19	230 KV IBN ZAHR LINE-B PD TRIP CH 2 REC		
FR1DI-20(+)	FR1DI-20/X1-20	G	20	○	20	D03/QA-1 BKR OPEN		
FR1DI-21(+)	FR1DI-21/X1-21	G	21	○	21	D03/QA-1 AUTO RECLOSE-FUTURE		
FR1DI-22(+)	FR1DI-22/X1-22	G	22	○	22	D03/QA-1 86-1 OPT		
FR1DI-23(+)	FR1DI-23/X1-23	G	23	○	23	D03/QA-1 86-2 OPT		
FR1DI-24(+)	FR1DI-24/X1-24	G	24	○	24	D03/QA-1 94BF OPT		
FR1DI-25(+)	FR1DI-25/X1-25	G	25	○	25	D03/QA-1 86BF OPT		
FR1DI-26(+)	FR1DI-26/X1-26	G	26	○	26	D03/QA-1 94PD1 OPT		
FR1DI-27(+)	FR1DI-27/X1-27	G	27	○	27	D03/QA-1 94PD2 OPT		
FR1DI-28(+)	FR1DI-28/X1-28	G	28	○	28	230 KV IBN ZAHR LINE-B RELAY SET-1 BUSBAR CH 1 REC		
FR1DI-29(+)	FR1DI-29/X1-29	G	29	○	29	230 KV IBN ZAHR LINE-B RELAY SET-2 BUSBAR CH 2 REC		
FR1DI-30(+)	FR1DI-30/X1-30	G	30	○	30	SPARE		
FR1DI-31(+)	FR1DI-31/X1-31	G	31	○	31	SPARE		
FR1DI-32(+)	FR1DI-32/X1-32	G	32	○	32	SPARE		

DWG. NO. ,SHT:

X1-C

1	○	1	+125 VDC	DWG.NO#	SHT:
2	○	2	+125 VDC	DWG.NO#	SHT:
3	○	3	+125 VDC	DWG.NO#	SHT:
4	○	4	+125 VDC	DWG.NO#	SHT:
5	○	5	+125 VDC	DWG.NO#	SHT:
6	○	6	+125 VDC	DWG.NO#	SHT:
7	○	7	+125 VDC	DWG.NO#	SHT:
8	○	8	+125 VDC	DWG.NO#	SHT:

X1-C-9

19 E6

NOTES

GENERAL NOTES:
1. 24 CICT'S ARE RATED 1 AMP NOMINAL CURRENT. CICT'S ARE SUPPLIED LOOSE & MOUNTED REMOTELY.
2. DIGITAL INPUT FIELD CONTACT VOLTAGE IS 125VDC AND IS DISTRIBUTED ON X1-C.
3. LABEL NOTES:
AI REFERS TO ANALOG INPUT
DI REFERS TO DIGITAL INPUT
R REFERS TO RED
Y REFERS TO YELLOW
BLU REFERS TO BLUE
BLK REFERS TO BLACK
G REFERS TO GRAY
4. WIRE MARKERS ARE LOCATED AT BOTH ENDS OF EVERY WIRE DESIGNATING WIRE ORIGIN AND DESTINATION. WIRE MARKERS ARE HEAT SHRINK TYPE.
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8. PRIMARY FAN(F1) ARE CONTROLLED BY F1SC SPEED CONTROLLER SET TO ATTAIN FULL SPEED WHEN THE TEMPERATURE REACHES 40°C.

AMETEK S.O.# : 11002273-3	
AMETEK DRAWING# : D-1105-212	
SAITE P.O. # : API-D-0826-06656	
REFERENCE DRAWINGS	
DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET NUMBER	ED-306014

ISSUED FOR CONSTRUCTION

AS-BUILT BY		DATE	
00	27/01/15	SKT	ISSUED FOR CONSTRUCTION
MA			
REV.	DATE	BY	DESCRIPTION

الشركة السعودية للكهرباء
Saudi Electricity Company

DRAWN BY: MA CHECKED BY: SCALE: NONE
DATE STARTED: 28-11-12 DATE COMPLETED:
DPR'G. DEPT.: ENG. DEPT.:

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION OR FOR ORDERING MATERIAL UNTIL CERTIFIED AND DATED
CERTIFIED BY: DATE:

TR-2200 FAULT RECORDER
FR1 DIGITAL CHANNEL 1-32 WIRING DET.
SEC-ROOM : IBN SINA S/S

JUBAILSAUDI ARABIA

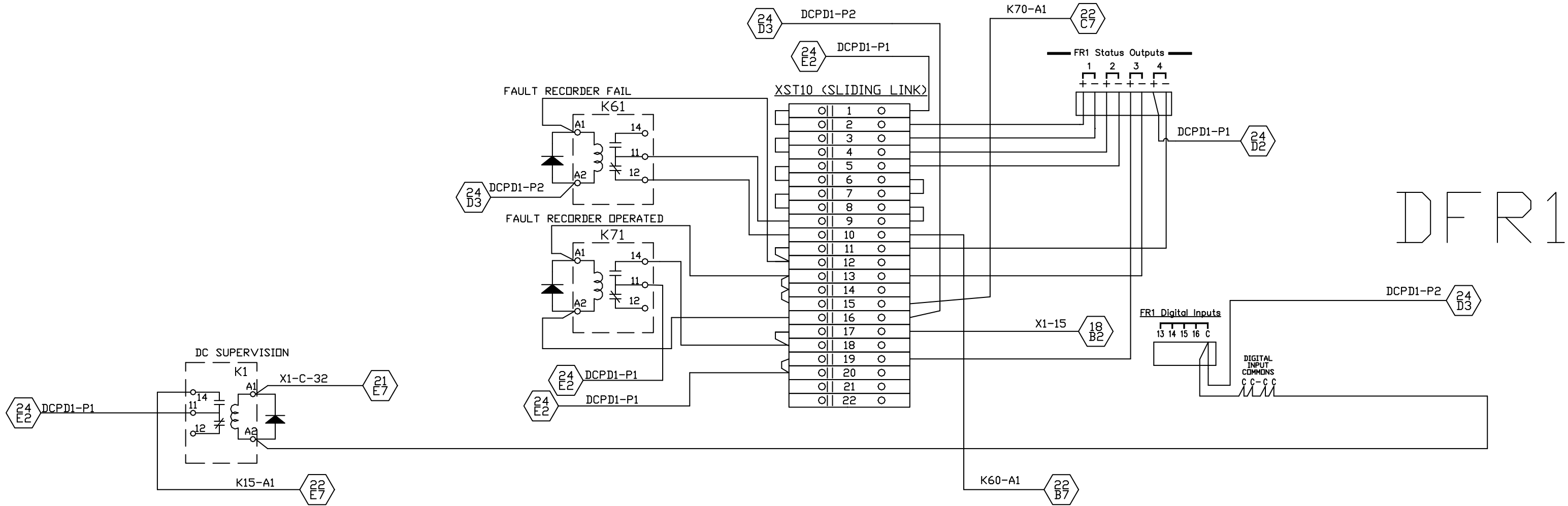
JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
3-1213004	P	T413	ED-306151	18 of 24	00

SEC-ERB CAD-A (2002/04)
1105-212_18.DWG
DMS VECTOR
Code03

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2				1			
JOB ORDER NO.	3-1213004	INDEX	P	PLANT NO.	T413	DRAWING NUMBER	ED-306151
REV. NO.		23 of 24		SHEET NO.		00	

INDIVIDUAL STATUS RELAYS



NOTES

STATUS RELAY NOTES:

1. POWER (STATUS OUTPUT 1) CLOSED WHEN POWER IS ON.
2. ON-LINE (STATUS OUTPUT 2) CLOSED WHEN TR IS ON-LINE.
3. TRIGGERED (STATUS RELAY 3) WILL CLOSE FOR 0.5S WHEN TR IS TRIGGERED.
4. ATTENTION (STATUS OUTPUT 4) OPEN UNDER NORMAL OPERATION.
5. RELAY K60 (FAULT RECORDER FAIL) -ENERGIZED UNDER NORMAL OPERATION -DE-ENERGIZES UPON LOSS OF POWER, TR GOING OFF-LINE, OR UPON ATTENTION STATUS ALARM.
6. RELAY K70 (FAULT RECORDER OPERATED) -DE-ENERGIZED UNDER NORMAL OPERATION. -ENERGIZES UPON TR TRIGGERING. -ADJUSTABLE ENERGIZING TIME 0.1 SEC. TO 270 SEC.
7. RELAY K15 (DC SUPERVISION) -ENERGIZED UNDER NORMAL OPERATION. -DE-ENERGIZES UPON LOSS OF FIELD CONTACT / RELAY VOLTAGE.
8. ALL RELAYS ARE SHOWN IN SHELF STATE.
9. DIGITAL INPUT #15 IS USED FOR CROSS-TRIGGERING IN ALL RECORDERS.

AMETEK S.O.# : 11002273-3

AMETEK DRAWING# : D-1105-212

SAITE P.O. # : API-D-0826-06656

REFERENCE DRAWINGS

DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET NUMBER	ED-306014

ISSUED FOR CONSTRUCTION

AS-BUILT BY _____ DATE _____

00	27/01/15	SKT	ISSUED FOR CONSTRUCTION	MA			

REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APP'D.

الشركة السعودية للكهرباء
Saudi Electricity Company

DRAWN BY: MA CHECKED BY: _____ SCALE: NONE

DATE STARTED: 28-11-12 DATE COMPLETED: _____

DPR'G. DEPT.: _____ ENG. DEPT.: _____

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION OR FOR ORDERING MATERIAL UNTIL CERTIFIED AND DATED

CERTIFIED BY: _____ DATE: _____

TR-2200 FAULT RECORDER

INDIVIDUAL STATUS RELAYS

SEC-ROOM : IBN SINA S/S

JUBAIL SAUDI ARABIA

JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
3-1213004	P	T413	ED-306151	23 of 24	00

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SEC-ERB CAD-A (2002/04)
DMS VECTOR Code03